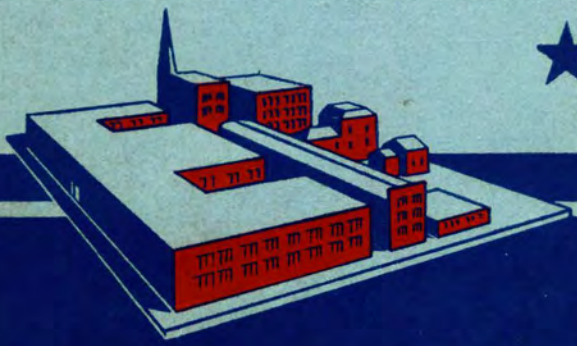
Wartime PROGRAM

1943 - 1944



ROCHESTER ATHENAEUM & MECHANICS INSTITUTE

INDIVIDUALIZED EDUCATION

Bulletin of the
Rochester Athenaeum
& Mechanics Institute

DATES OF REGISTRATION
1943-1944

Applicants and Upperclassmen, Section A: Sept. 8
Upperclassmen, Section B: Oct. 4

CONVOCATION: MAY 13, 1944

ROCHESTER, NEW YORK, MARCH, 1943

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**On leave of absence to serve with armed forces.*

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The demands of the armed forces and war industries for skilled personnel have placed a great obligation upon educational institutions. The Rochester Athenaeum and Mechanics Institute has recognized this obligation from the beginning of this emergency and has accepted full responsibility for its part in this program. Courses have been revised and new courses developed to meet special requirements and as new needs continue to arise the Institute is ready to adjust itself to meet them. Equipment facilities have been enlarged and made available for special war uses. The knowledge and special abilities of a highly skilled staff are being increasingly utilized to meet war needs.

For many years the Institute's courses have been geared to the needs of industry and business. With the increased and specialized demands of a war economy this program has been expanded and intensified.

Recognizing that it is best fitted to educate young men and women for positions requiring technical competence, the Institute will continue to offer its regular courses. As in the past, it will also offer specialized short courses in both day and evening divisions to meet specialized needs as they arise either in industry or for those who enter the armed forces. It will continue to be the Institute's aim to utilize to the fullest possible extent all its resources—personnel, equipment and experience, for the promotion of the war effort to decisive victory.

INDIVIDUALIZED EDUCATION . . . .

1943 DAY PROGRAM

THE Rochester Athenaeum and Mechanics Institute, a privately endowed, non-profit-making organization situated in downtown Rochester, offers unexcelled educational opportunities for men and women interested in an individualized program of technical training.

The Athenaeum, a self-governed, democratic organization for the advancement of cultural opportunities was founded in 1829. In 1891 it merged with Mechanics Institute, a school for specialized technical training, to form the present Rochester Athenaeum and Mechanics Institute. Since that time, day and night classes have multiplied rapidly to meet community needs. Materials presented in the following courses are varied and current: mechanical, electrical, chemical, photographic technology, publishing and printing, applied art, food administration and retailing.

Individualized education is the primary objective at the Institute. With the aid of the counseling staff, each student sets up obtainable goals. Then through systematically planned projects he develops the skills, techniques and understandings with which he may best serve himself, his employer and society.

In vocational, economic, and social areas, the Institute provides educational opportunities which lead to occupational competence and constructive citizenship. Through purposeful activity based on expert analysis, through technical training, and practical working experience, Rochester Athenaeum and Mechanics Institute students attain the essential skills which lead to continuous growth—self direction and self evaluation.

COUNSELING

COUNSELING at the Institute is one of the most important means of shaping the growth and development of students in evaluating their progress and in aiding them in reaching their goals. At the time of application, counselors interview entering students to become acquainted with their qualifications and to discover their general and special interests. In this interview, the counselor discusses with applicants their personal objectives, financial plans, preparation,

and the required entrance procedures. This initial interview aids the counselor in determining the fitness of the applicant for the course he has elected.

Beginning with this initial interview, the counseling of students is systematically continued throughout their entire stay at the Institute. Counselors arrange interviews for the purpose of discussing student progress, the problems they encounter, and their plans. Materials from the student record folders enable counselors to discuss current scholastic progress and any social or personal problems in connection with which the student needs help. The general aim of this series of interviews is to direct the student's attention to the need for long-range planning to meet his own personal objectives.

As a result of these interviews, students and counselors may agree upon plans of action for the students to follow to accomplish their own occupational or personal goals. From time to time the counselor may discuss the progress which the student has made or may suggest changes in plans whenever necessary. By these procedures, the counselor assists the student in meeting difficulties which arise in connection with the scholastic program, co-operative employment, or in achieving desirable personal characteristics.

Under the present war program, the counseling of students at entrance and during their first year is of the utmost importance. The fact that many of the men will be called into the armed services soon after reaching the age of eighteen means that whatever time is available for study should be used efficiently. Women who apply for the technical courses must be counseled carefully to insure that they receive the maximum benefits from both co-operative job and classroom. In addition, planning for progress on co-operative jobs and for eventual permanent placement will require careful attention.

RECORDS FOR COUNSELING

Records are kept for each student to aid in determining progress in the following five areas: (1) classroom and laboratory work, (2) personal development, (3) plans for future study, (4) participation in activities outside the classroom, and (5) co-operative employment for those in co-operative courses.

In the classrooms and laboratories, instructors keep detailed records of the quality and quantity of work completed for the purposes of evaluating progress and for counseling. In some classes, short paragraphs are written by the instructor to describe the quality and quantity of the work the student is doing and to suggest means for improvement. In addition to scholastic grades, members of the faculty and counselors cooperate in accumulating a record of the attitudes and actions of each student in the classroom, in the laboratory, in student activities and on his co-operative job. At regular intervals, these records are summarized by the counselor and used as a basis from which to encourage the student to develop desirable personal characteristics. In addition each student is encouraged to outline his occupational and personal aims and to accept increasing responsibility for preparing himself to attain these goals.

CREDENTIALS

IT is the policy of the Institute to advise students to remain in school until they acquire vocational skills and knowledge which will enable them to make satisfactory progress in employment, and until they demonstrate ability to make well-balanced plans for future personal and occupational development. Normally, two- and three-year courses have been scheduled but because progress is primarily an individual matter the Institute refrains from setting up rigid time limits for all students. Of interest to both the student and the Institute staff is the progress that the former makes in the five areas previously outlined.

Admission of a student for his last year in a regular course ordinarily indicates that he is a candidate for the credential of the Institute. The student will receive the credential award when it is clear to both counselor and student that the individual goals set by them have been achieved. Some students may qualify for credentials before the end of the final academic year; others may require a longer time.

In accordance with the individualized educational program, the Institute credentials include both a certificate of accomplishment and a summary of the progress, growth and development made by each student. This award is made whenever it is clear to both student and counselor that the program previously accepted by both has been completed. The Institute grants no degrees.

OCCUPATIONAL COUNSELING

Each counselor at the Institute is an experienced occupational adviser. Many young men and women find it to their advantage to consult with the Institute counselors regarding future training. By so doing, they are enabled to familiarize themselves with a number of fields and receive suggestions and expert advice. Persons wishing to avail themselves of this service may make appointments by writing to the registrar or to the department counselor concerned.

Each counselor interviews applicants for his own course and, in the case of co-operative courses, seeks co-operative employment for his students in industries in western New York. In this work, he contacts employment and personnel managers and other officials in manufacturing and public service corporations. Because of these contacts, he is in a position to advise young men and women regarding the quality and extent of opportunities available in any given field in this geographic area as well as to advise them regarding the suitability of their personal qualifications for a given occupation.

To aid young men and women in the selection of an occupational field in which to train, the Institute has prepared a series of guidance booklets for the fields in which training is offered. Copies of these publications are available upon request. The titles in this series follow:

No. 1 If You Are Considering Retailing
No. 2 If You Are Considering Photography
No. 3 If You Are Considering Industrial Chemistry
No. 4 If You Are Considering Applied Art
No. 5 If You Are Considering Costume Design
No. 6 If You Are Considering a Career in The Mechanical Field
No. 7 If You Are Considering a Career in The Electrical Field
No. 8 If You Are Considering Food Administration
No. 9 If You Are Considering a Career in The Construction Field
No. 10 If You Are Considering Publishing and Printing
No. 11 If You Are Considering Interior Decoration

In general, these publications include information about the various branches of the occupational field—the duties performed by persons employed, the requirements for employment, wages, salaries, security, promotions, and both the advantages and disadvantages of employment in that field.

Each publication in the series includes one or more job charts indicating the basic, or upper level and the intermediate jobs to which Institute training is directed as well as the training jobs usually held by students in co-operative courses while gaining experience. An explanation of these charts appears on page 25.

ENTRANCE REQUIREMENTS

IN general, applicants seeking to gain competence in one of the areas for which the Institute offers training must present certification of high school graduation, college training, or other personal qualifications indicative of ability to profit by the instruction at the Institute. Applicants having no professional or technical experience are expected to be high school graduates and have the recommendation of their high school principal. It is essential that applicants meet the health requirements stated in the Rules and Regulations (see page 19). Other requirements will be found under the specific courses.

APPLICATION

Applicants must fill in and submit the regular application form specifying the course desired. An application fee of $5.00 must accompany each application. This is credited on tuition and cannot be refunded under any circumstances. Applications must be filed and this fee paid before classification examinations may be taken.

INTERVIEW

Applicants for all courses must arrange for an interview with the department counselor. In general, it is desirable that interviews take place as early in the spring or summer as is practicable. Applicants may be interviewed on the

day they take classification examinations. For students who live at a distance, both interview and examinations can be arranged at the beginning of the school year, *if definite appointments are made in advance.*

The Institute offices are open each day of the week from 8:30 a.m. to 5:00 p.m. and on Saturday from 8:30 a.m. to 12:00 noon.

CLASSIFICATION EXAMINATIONS

All applicants for Electrical, Mechanical, Chemistry, Photographic Technology, Publishing and Printing, Retail Distribution, Costume Art and Retailing, Interior Decoration and Retailing and Food Administration Courses must take classification examinations. Applied Art applicants take only the physical examination after registration.

Classification examination results provide the course counselors with information which aids them in determining the fitness of the applicant for the objective he has chosen, and are used by counselors in recommending applicants to co-operative companies. Applicants are accepted only after classification examination results and other information have been tabulated and evaluated. It is therefore important that applicants make some preparation for the subject matter tests given. Departmental tests aim to measure special abilities and aptitudes.

The examinations include mathematics, reading, mental alertness, and a physical examination including a blood test. For 1943 the dates for both men and women are as follows: July 9, August 13, Sept. 7. The complete battery of tests requires attendance for one full day.

In preparing for the examinations, applicants may secure outlines of the subject matter to be covered from the department counselor. Remedial Mathematics test material for review may be secured at the Institute Store at a cost of 65c and 80c respectively for the Departments of Retailing and Food Administration. Mathematics tests are not required for Applied Art applicants.

Examinations begin promptly at 8:00 a.m., Eastern War Time, continuing until about 3:30 p.m. with an hour's intermission for lunch. All examinations are held in the Eastman Building fronting Plymouth Ave. South between Broad and Spring Sts. Applicants will provide themselves with pencils and an eraser. Examination results will be mailed to applicants as soon as practicable.

Women applicants living at a distance may reserve accommodations at the Y. W. C. A. residence, Kent Hall, 57 S. Washington St., one block from the Institute, for themselves and women family members at a cost of $1.00 per person per night. Reservations must be made in advance. Suitable accommodations for men applicants are available near the Institute.

Early application and completion of other pre-registration requirements work to the advantage of the applicant. For applicants who live at a distance, it is important that all possible details be cared for by correspondence well in advance of registration. Co-operative course applicants whose qualifications are approved are considered for immediate placement.

THE RESIDENCE HALL FOR WOMEN STUDENTS
IS A MODERN APARTMENT BUILDING

CO-OPERATIVE PLAN

THE co-operative plan of education at the Institute seeks to relate technical training received in classes, laboratories, studios and shops with actual employment in manufacturing establishments, business concerns, food service organizations, retail stores and hospitals. Students in co-operative courses are employed in positions which are related to the courses in which they have enrolled. The employment is arranged in such a way that students spend approximately equal amounts of time at work and in school in alternating periods of equal length.

The co-operative plan provides that immediately after a student has made his choice of a technical field, he may begin to work in that field. Co-operative students in the Retail Distribution Course begin work in retail stores where they pass through a series of training positions which prepare them for the position of buyer. Co-operative students enrolled in the Mechanical, Electrical or

Chemistry Course immediately begin work in some industry where they are connected with some phase of manufacturing or of engineering. In the Food Administration Course students are employed in food service organizations or as student dietitians in hospitals. In the meantime, technical study at the Institute relates their work experience with their technical education. After two or three years of this type of combined practice and education, the student is well prepared by education and experience to enter upon his chosen field and move along more rapidly than he would have without this training. During the period of employment, through assignments, reports and other devices, the Institute guides the student's observation and his assimilation of experiences. Continuous education and training results from this constant contact with the faculty. Students acting with the advice of the counselor are expected to co-operate in finding employment for themselves. The Institute cannot guarantee co-operative employment to students in any department.

HOW IT OPERATES

The co-operative courses are arranged so that a period of weeks of school training is followed by a similar period of weeks of practical experience on the co-operative job. The number of weeks of training varies with the course chosen. At the beginning of the school year and at other times when co-operative jobs become available, employment managers interview and employ students in pairs. One student of each pair starts work immediately while the second attends classes at the Institute. At the end of the work period, usually four weeks, the student who has been in school goes to work and the student who has been working attends classes. This procedure continues from September to June with adjustments to provide short vacations. In some cases, work continues on a full-time basis for all or part of the summer recess, either one or both of a pair of students being employed. In some cases, pairs of co-operative students divide the summer work equally. The dates upon which students normally change from work to classes or vice versa appear in the current Co-operative Calendar which may be had upon request.

There are certain variations in the work and school arrangements depending upon the requirements in the field of employment. In the Department of Retailing all students are employed full time from Thanksgiving to Christmas. This means that the school year extends approximately three weeks beyond that for other departments.

Special arrangements may be made with some co-operative employers to follow some program other than that outlined above to meet special conditions.

HOW PLACEMENT IS MADE

Counselors interview entering students, usually at the time of application, to become acquainted with their qualifications, aptitudes and interests. High School preparation, work experience, special abilities as well as the results

of classification tests are all considered in recommending entering students for co-operative placement.

Under present conditions, it is anticipated that there will be co-operative job opportunities for all applicants early in the Summer of 1943. It is further expected that women applicants for the Mechanical, Electrical and Chemical Courses will have equal opportunity for placement with men students. When applicants are accepted and are ready for co-operative placement, an interview is arranged between the student and the employment manager of a co-operating company regarding placement. If the applicants are acceptable to the employment manager and the job arrangements are acceptable to the Institute counselors, the applicants are employed. Department counselors direct students to employment managers and personnel officers in organizations where co-operative positions are known to be available and supply them with information from student folders.

If co-operative employment does not become available during the summer previous to enrollment, applicants may be employed at the beginning of the school year or even later during the school year if circumstances seem to warrant it. In the case of late entrance, adjustments in the work and instruction program permit the student to complete the work ordinarily outlined for the year.

ADVANTAGES OF CO-OPERATIVE TRAINING

Numerous advantages result from co-operative training:

1. Co-operative students are enabled to relate the technical instruction they receive at the Institute directly to the job they work at in industry. It is impossible for schools to duplicate conditions which are found on the actual job. There is nothing which can take the place of practical experience which co-operative students receive.
2. Co-operative students are employed as regular employees of the companies for which they work. They receive pay for the work they do, the amount of which depends upon the job held, the length of time employed by the company, and the ability of the student.
3. The student's earning power is sufficiently great to meet ordinary living expenses throughout the year exclusive of tuition, tuition fees and textbook costs.
4. Co-operative students have the opportunity of making industrial and other business connections through their co-operative job which usually permit them to secure full-time employment upon graduation. It has been found that the great majority of the graduates of co-operative courses remain with the companies with which they secured their co-operative training and experience.
5. The co-operative plan permits each student to make a contribution to the national defense effort. All of the manufacturing companies which employ co-operative students are engaged in national defense production.

FULL-TIME INSTRUCTION

In cases of students enrolled in co-operative courses for whom co-operative employment is impractical, the Institute has made special adjustments in its instructional program to permit full-time attendance. This is possible in the Co-operative Electrical, Co-operative Mechanical and Co-operative Chemistry Courses. Such students, either because they plan to enter the armed services or for other reasons, may remain in residence for twenty-seven weeks to complete one co-operative year or longer if they elect to carry on second year work. Individualized instruction permits each student to proceed with his work as rapidly as he can master the course content.

Some students who are unemployed at the beginning of the year, find co-operative employment at a later date. Under this program of individualized instruction, these students change to a co-operative course without loss of time and without interfering with their progress in the work of the course. Students who lose their co-operative employment because of economic conditions continue in school on the full-time basis until they find other employment. Taking advantage of this flexible program of instruction, many students find temporary employment by means of which they earn needed funds or secure specialized experience.

Students enrolled in the Food Administration Course and in the Retailing Department who are not employed on co-operative jobs attend classes only during the co-operative period to which they are assigned. If employment is secured for such students, they may enter such employment without interference with their instructional program.

Full-time courses in the Department of Applied Art, in Publishing and Printing, and in Photographic Technology require attendance on the semester plan, beginning in September and ending in June. Details appear in the calendar, in department publications or under courses in this publication.

STUDENT ACTIVITIES

EXTRA-classroom activities form an integral part of student educational experiences at the Institute. A broad and worthwhile program has been developed and matured over a long period of time under student leadership. Participation in extra-classroom activities is open to all students subject only to their needs, interests, and aptitudes. It is a tradition at the Institute that official recognition shall result from a demonstration of public spirit and of will and capacity to play a constructive part in the community life of the school.

In many instances, counselors advise and encourage individual students to participate in one or more student activities for the purpose of securing better personal as well as physical development. In cases of this kind the selection of the activity is based on the student's interests and abilities as well as on the personal qualities it is desirable to develop.

DEMOCRACY IN ACTION

Since 1916, Institute students have developed a truly democratic way of living in, and of governing affairs in, their school community. They apply the principles of democracy to their student government and to their ways of thinking and acting in school affairs.

The machinery for effectuating this democracy is incorporated in the Student Association of which all students are members. The Student Council is the governing body of the Association and is composed of representatives of all the classes. This Council participates with the Institute administration in formulating school policies and aids the administration in making these policies effective.

Each student contributes an equal amount, fifteen dollars a year, toward a sum which is budgeted among the activities supported by the Student Association. The Student Council passes on the budget of each organization whose work it helps to finance, ratifies the election of student officers, promotes all worthwhile activities, and sees that student money is expended in an economical manner.

CLARK UNION

Clark Union, governed by the Student Council, provides social and recreational facilities for all students. Lounges, game rooms and meeting rooms provide adequate facilities for informal gatherings, receptions and dances. A Carnegie music set with nine hundred selected records provides opportunity for music appreciation hours.

STUDENT PUBLICATIONS

The student publications offer opportunities for student writers and artists. The Psimar, student newspaper, is published as a "reflection of student life and an expression of student opinion." The Ramikin, student year book, contains a pictorial and written portrayal of student life at the Institute during the year. The Student Handbook issued each year, contains detailed information concerning student activities and organizations. Psimar, Ramikin, and Student Handbook are financed by the Student Council and are distributed to all regular students. Bulletins devoted to the science and practice of photography, to publishing and printing, and to the retail field are published and financed by their respective departments.

The Student Council of the Student Association has prepared the regulations for the control of social and avocational activities. These are printed in the Student Handbook, a copy of which is given each incoming student. Because of the large number of student organizations at the Institute, all of which carry out their own social programs independently, it is necessary that every student shall know and observe the Student Council's regulations.

INSTITUTE STUDENTS PARTICIPATE IN A WIDE VARIETY OF ATHLETIC AND SOCIAL ACTIVITIES

MEN'S ATHLETICS

Athletics for men consist of those sports in which a comparatively large number of men can participate.

Basketball and wrestling are the major sports. For the duration of the war, interscholastic contests in both these sports have been replaced by intramural contests which provide essential physical exercise needed by all students. Both squads are trained by competent faculty coaches and both begin their schedules early in the winter and continue until spring.

Three doubles tennis courts are used to provide tennis instruction and recreation under the direction of a competent coach. A tennis team plays matches with other schools in the spring. A tennis tournament is held in the fall.

Inter-class and inter-fraternity athletics are an important part of the sports program. A baseball league in the fall and spring gives many men students a chance for exercise and recreation. Emphasis is placed on all-round physical development.

WOMEN'S AND MEN'S ACTIVITIES ASSOCIATION

This Association organizes and supervises most of the sports activities in which both men and women participate. Among the sports offered are: Bowling, basketball, golf, tennis, badminton, riding, and swimming. These sports are scheduled as closely as possible according to their appropriate seasons. The major portion of the cost of these activities is borne by the Student Association.

GLEE CLUB AND DRAMATIC CLUB

A Dramatic Club and Men's and Women's Glee Club under competent leadership provide recreational and avocational activities for students who are interested.

STUDENT TECHNICAL ASSOCIATIONS

The various Technical Associations have an important part in Institute life, for they bring together students who have common interests in special subjects. The associations are both social and professional in their purpose. The associations at the Institute include: The Electrical Students' Association, Mechanical Students' Association, Photographic Technology Students' Association, Chemical Students' Association, Camera Club, the Art Students' League, the Student Publishers' and Printers' Association and the Retailers' Association.

THE RESIDENCE HALL

The Residence Hall constitutes a center around which much of the social life of the school revolves. Resident women are responsible for governing life within the hall and for planning and directing the many activities for women in residence.

RULES AND REGULATIONS

EVERY effort is made to reduce the number of rules and regulations to a minimum. This is largely accomplished by student self-government, through the Students' Association which exercises direct control over many of the student activities. Faculty advisers, appointed for each student activity, meet with the various organizations and help to formulate and carry out plans.

A few regulations, indispensable to the welfare of the student body, have been adopted. Their importance is generally recognized and, consequently, accepted by the students. Upon registration every student receives a copy of these regulations and is held responsible for observing them. The Institute reserves the right to be sole judge of what shall constitute a violation of regulations, as well as the right to fix the penalty for such violation which, in any case, may be dismissal.

Registration is not considered complete and no student is finally accepted until the applicant has passed the Institute physical examination including a blood test. Physical defects such as faulty vision or neglected teeth, must be cared for upon the recommendation of the Institute physician. Applicants are urged to correct vision defects, to complete necessary dental work, and to correct hernia or other remediable conditions, before reporting for the Institute physical examination. In addition, the requirement of a recent successful vaccination for smallpox must be met. Recommendations of outside, or family physicians, are not acted upon unless supported by the judgment and advice of the Institute physician.

A health maintenance program is recommended for all women students. Students needing special health programs must have such programs arranged with the advice and approval of the school physician. If there are any special facts in possession of a student's family physician of value to the Institute physician, the case history should be forwarded direct to Dr. Eugene Powell, School Physician for the Institute.

Attendance regulations for entering students are strictly enforced. There is no "cut" system. Students are expected to attend regularly all scheduled classes, laboratories, and shops. Every absence must be accounted for as provided in the attendance regulations, a copy of which is given to each student upon registration.

All women students at the Institute not living with their parents are required to live at the Residence Hall. Exception is made for those who work for their room and board and for those for whom a home is provided by immediate family relations. Regulations for the Residence Hall will be sent upon request. Permission for any exception to this regulation must be approved by the President of the Institute before registration.

EXPENSES

Tuition and fee charges for the year are listed below by courses. These amounts are payable to the Rochester Athenaeum and Mechanics Institute in two installments as indicated. A senior fee of $5.00 is payable by senior students at the beginning of the senior year.

COURSES	Tuition	Student Ass'n Fee	Class Dues	Lab. Fees	Total	First Install.	Second Install.
Applied Art (Full time)	$250	$15	$1	$10	$276	$151	$125
Chemistry (Co-operative)	200	15	1	20	236	136	100
Electrical (Co-operative)	200	15	1	10	226	126	100
Food Administration (Co-operative)	200	15	1	10	226	126	100
Mechanical (Co-operative)	200	15	1	10	226	126	100
Photo. Tech. (Full time)	250	15	1	30	296	171	125
Publishing and Printing (Full time)	250	15	1	20	286	161	125
Retailing (Co-operative)	200	15	1	..	216	116	100

For Co-operative Courses, the first installment of one-half of the tuition ($100.00), and all fees, is due upon registration, September 8, 1943. The second installment of tuition ($100.00), is due and payable January 6, 1944.

For Full-time Courses, the first installment of one-half of the tuition ($125.00), and all fees, is due upon registration, September 8, 1943. The second installment of tuition ($125.00), is due and payable January 31, 1944.

Tuition and fees for all courses are due and payable on or before dates specified and cannot be refunded. Registration is not complete until tuition and fees are paid.

In order that registration procedure may be completed on the specific registration days, the Institute makes an additional charge of five dollars ($5.00) to those students who are late in completing registration or tuition payments. This charge also applies to late payment of any other fees. It is never refunded.

The dates for registration and payment of tuition installments are published in the departmental calendars.

A limited number of tuition scholarships will be available for 1943-44. A revolving student loan fund makes small sums of money available to needy upperclass students.

LOCKER DEPOSITS (per year)

(Refunded when key or lock is returned at end of school year.)

LOCKER DEPOSIT $1.00

Additional Locker Deposit required in Costume Art and Retailing, and third year Photographic Technology 1.00

Tuition charges and fees including the locker deposit are fixed and are due and payable to the Institute on specific dates. However, the cost of textbooks and supplies may vary somewhat from the estimates given below. These estimates represent an average for any given course for textbooks and for supplies and equipment of satisfactory quality. The major portion of this expenditure must be made at the beginning of the school year. Each student purchases his own textbooks and supplies. The Institute operates a store at which textbooks and supplies may be purchased. The Institute store carries a stock of materials and supplies of a kind and quality recommended by instructors.

TEXT BOOKS AND SUPPLIES (Estimated per year)

Applied Art Courses	$75.00	Mechanical Courses	$ 35.00
Chemistry Course	35.00	Photographic Technology	$100 to 150.00
Electrical Course	35.00	Publishing and Printing	35.00
Food Administration Courses	25.00	Retailing Courses	25.00

SPECIAL DRESSES REQUIRED *(Food Administration Course)* ..... $20.00 to 30.00
MATERIALS FOR CONSTRUCTION PROBLEMS *(Costume Art and Retailing)* 25.00

GENERAL EXPENSES FOR WOMEN STUDENTS

Women students residing at the Residence Hall occupy double, large double or triple apartments at a cost indicated below. This cost includes five evening dinners per week and a specified amount of laundry.

Students in co-operative courses who, because of co-operative employment, are not continuously in residence at the Residence Hall may arrange for an adjustment of time covered in lease, upon the recommendation of the Department Counselor. In general the lease covers not less than 19 weeks.

	Per Student 38-wk. lease	19-wk. lease
Double Apartment (2 students)	$323.00	$161.50
Large Double Apartment (2 students)	370.50	185.25
Triple Apartment (3 students)	313.50	156.75

Residence Hall fee required at time of application for apartment.

For 38-week residence $6.00
For 19-week residence 3.50

This fee covers key deposit, house dues and minor breakage.

Dinner on Saturday and Sunday, as well as breakfast and lunch throughout the week may be prepared and served by students in their own apartments. Apartments include a kitchenette with electric refrigerator and gas stove.

See bulletin, "Residence Hall for Women Students," for detailed information.

FOR MEN STUDENTS

Room and board for men may be secured near the Institute and may be estimated from $8.00 to $12.00 per week, depending upon the requirements of the student. Some students have reduced this figure to $7.00 per week.

Daily luncheons are served to all students in the Institute cafeteria at a moderate cost.

Students should be prepared to meet the above expenses in addition to the cost of room and board for the year. Too great reliance must not be placed upon income from co-operative jobs and other part-time work. The Institute publishes a Student's Budget of Expenses which includes estimates of the cost of room and board for men, daily luncheons, laundry, entertainment and other expenses. A copy will be mailed upon request.

BUILDINGS AND EQUIPMENT

THE Institute buildings are located near the business section of Rochester. Facilities for entertainment, recreation and sports are easily reached.

The Eastman Building houses the technical laboratories, drawing rooms, and classrooms for the mechanical, electrical, chemical, and publishing and printing courses; laboratories and classrooms for the Departments of Retailing, Food Administration, the Institute cafeteria and dining rooms, and complete kitchen facilities.

The general library in the Eastman Building contains a selected collection of reference and technical works for the use of all Institute students. A large number of selected current periodicals as well as complete files and bound volumes for previous years supplement materials in both the general and technical fields. In addition, a number of departments maintain technical libraries for reference work.

The entire ground floor of the Industrial Arts Building is occupied by the machine shop with facilities for general machine work, tool and die making and heat treating. The photographic laboratory and studio, occupying parts of the second and third floors, provide dark rooms and studios. A technical chemical laboratory, also on the third floor, houses metal semi-scale manufacturing equipment for chemical processes.

The Bevier Memorial Building houses the Department of Applied Art, including offices, the art library, exhibition hall and studios. A number of well-lighted drawing rooms and studios provide ample facilities for students.

The Residence Hall is a modern apartment building immediately adjacent to the other Institute buildings. Six floors of apartments, each for two or three girls, with elevator service and modern building equipment, provide unique living accommodations. Each apartment is a small home unit with a modern electric refrigerator and gas stove in a compact kitchenette, private bath and dressing room. A spacious living room and a lounge on the first floor provide resident women with facilities for social activities and the entertainment of guests.

A Residence Hall director, faculty counselors and dietitians supervise both the social activities and the planning and preparation of meals in the apartments. A booklet giving full details of the Residence Hall plan is available on request.

Facilities for wrestling with mats, rings, shower baths and other equipment are available immediately adjacent to the Industrial Arts building.

Three macadam surfaced doubles tennis courts are located within a block of the Institute.

Clark Union, located adjacent to the Photographic Technology building, includes two living rooms, a large game room, offices for student activities, and several meeting rooms.

SPACIOUS LIVING ROOMS IN CLARK UNION PROVIDE OPPORTUNITY FOR STUDENT SOCIAL ACTIVITIES

DIGNIFIED ARCHITECTURAL FEATURES CHARACTERIZE CLARK UNION

PROGRAMS OF STUDY

EACH of the Institute courses has been designed to provide training for one or more specific objectives permitting students to prepare themselves for one or more positions in their chosen field. These positions, which graduates are expected to attain after a period of several years of experience after graduation, are in every case available in sufficient numbers to warrant the training of the students enrolled in the various courses and are of a quality to command the interest of capable, ambitious young men and women.

Graduates reach positions of this type through a series of promotions beginning with training positions held while they are still in school and graded through intermediate positions leading to the upper level or basic jobs as maturity, experience, and other factors warrant.

To enable students to visualize the promotion ladders to the basic or upper level jobs, one or more charts have been prepared for each course. Two typical charts appear on page 25. These and other charts for each course are printed in the vocational guidance booklet series. Copies of these booklets may be secured by writing to the course supervisor or the registrar.

Under normal conditions, co-operative students are employed during the period of their school attendance in one or more jobs listed as training jobs. Following graduation, promotion to jobs listed under the heading "intermediate" depends upon many personal and economic factors. However, with experience, a graduate may expect to advance through "intermediate" positions toward his chosen basic objective. Usually, a period of several years of growth and development must elapse before a graduate may expect to reach the basic job.

The training in each course is immediately directed toward the basic job listed. A carefuly survey of these jobs in each field has disclosed a comprehensive list of activities which the job requires. This list of activities has been prepared for each basic job and is used as a guide in the preparation of various courses. By this means, students train in the field which they select for future employment and for a job, the activities of which form the basis for the selection of the course content.

In addition to the basic and intermediate jobs, there is a list of supplementary basic and intermediate jobs. The activities for each job in these classifications are very similar to those required for the basic jobs; consequently, with small additional preparation, in many instances already included in the course, it is possible to prepare for any one of the jobs in this classification. Related jobs are those which call for similar training for which no direct provision is made in planning the curriculum. These related jobs are held less frequently by graduates trained for the basic job, or they are jobs which occur less frequently in industry and commerce.

Changes in employment conditions make it necessary to change the charts from time to time. Through the contact which grows out of co-operative employment, the student and the Institute keep in step with a changing world. The Institute's individualized education plan is devised to aid the student in adjusting to changes in industry as they take place.

Reading from the bottom of the charts there are listed the jobs which Institute co-operative students usually hold. After a number of years of school and job training and after demonstrating their ability, employees advance to one of the intermediate jobs and with a number of years of additional experience they may advance to one of the basic or supplementary jobs.

TYPICAL JOB CHARTS

BASIC JOBS	SUPPLEMENTARY JOBS	RELATED JOBS
Machine Designer	Chief of standards Chief draftsman Tool designer Technical supervisor	Chief engineer Catalog and instruction book illustrator Calculator Chief of stock room Technical salesman Field engineer Product engineer
BASIC INTERMEDIATE JOBS	**SUPPLEMENTARY INTERMEDIATE JOBS**	
Checker Layout man Detailer	Inspector Technical correspondent Order clerk	
TRAINING JOBS		
Stock Chaser Assembler Assistant inspector Machine tool operator Librarian	Card system clerk Tracing file clerk Tracer Blueprint boy Errand boy	

BASIC JOBS	SUPPLEMENTARY JOBS	RELATED JOBS
Buyer	Personnel worker Small store owner or manager Home maker (Duties connected with selection and construction of personal clothing)	Superintendent Purchasing agent for supplies Manager of receiving and marking room Delivery superintendent Head of credit department or interviewer Assistant in advertising department Personal service shopper Manager of adjustment department Service supervisor Stylist Interior decorator Sales promotion worker Copywriter for clothing, home furnishings
BASIC INTERMEDIATE JOBS	**SUPPLEMENTARY INTERMEDIATE JOBS**	
Assistant buyer Head of stock Salesperson	Floor manager Salesperson Worker in dressmaking shop	
TRAINING JOBS		
Assistant in training Assistant to buyer Stock clerk Floor supervisor Adjustor Shopper Salesperson	Decorator Clerical worker Wrapper Marker Receiver Delivery worker Workroom worker	

APPLIED ART PROGRAM

FIGURE DRAWING CLASS

THE Applied Art Program consists of full time courses for three years designed to meet the professional standards in the fields of Illustration and Advertising Art, Design and Interior Decoration. The content of the various courses gives training in original art expression, preparing for technical competence in one of these fields.

It is recognized that proficiency in art expression is achieved through the application and practice of art principles; that appreciation of the art heritage of past ages, alertness to present world conditions, and individual growth, as well as technical competence are significant and essential factors in the development of the creative artist.

The courses are based on the premise that fundamentals are essential in providing a foundation for later specialization. These fundamentals emphasize the importance of sound draftsmanship and an appreciation of the mechanics of art, used as a language for creative expression in art, and include experience with various mediums. The importance of following a core curriculum which is designed to promote flexibility in subject matter and adaptation to the needs of the individual student is a basic consideration.

Emphasis is placed on mastery of requirements for technical proficiency. This includes thorough drill in drawing and experimentation with various mediums in carrying out original, creative projects. The work of individual students is constantly measured against professional standards, and advice for specialization results from individual attainments. Students are counseled to major in the field for which most natural aptitude is shown.

Thirty hours of weekly instruction make up the average program, of which twenty-seven are devoted to the technical area and three to the liberal component. The fact that art training offers a variety of possibilities leads to the adoption of a curriculum which will contribute to the attainment of a variety of objectives. The professional requirements of the artist are used as criteria for designing all courses and the student may elect work in the three separate fields of Illustration and Advertising Art, Design or Interior Decoration. Professional standards of quality are upheld and the best contemporary practices are carefully scrutinized and adapted. Self-evaluation is an important part of all training. Progressive methods are employed in teaching, counseling and evaluation. The equipment of the school provides a most favorable environment for the study of art. A voluminous art library of source material located in the Bevier Building is constantly available to all students. Monthly exhibitions are held featuring the work of contemporary painters and illustrators.

ENTRANCE REQUIREMENTS FOR ART COURSES

General entrance requirements are given on pages 10 and 11. Before registering students making application for art courses should arrange for a personal interview with the supervisor of the School of Applied Art. The purpose of this interview is to determine native ability and depth and persistence of interest. Examples of work by the applicant should be submitted at this time. Applications submitted in the spring or early summer enable the supervisor to counsel the student and make plans regarding his individual program.

PROGRAMS OF STUDY

Normally, three years are required for completing the courses in Illustration and Advertising Art, Design and Interior Decoration, but it may require more time for some students to complete the required work.

ILLUSTRATION AND ADVERTISING ART

Practical training in all branches of illustration is given in this program. This includes problems in figure composition for story illustration, layout and typography, fashion illustration, and poster design with drill in various kinds of freehand lettering. Emphasis is placed on the relation of art to advertising. The importance of individuality is recognized and original, creative work is required. Various mediums are used and problems comparable to professional practice are assigned.

DESIGN

This program offers training to those who are particularly interested in decorative and functional design. Emphasis is placed upon problems which enable the student to understand and apply the fundamental principles of design. A thorough study of color is an integral part of the course. Students are taught to originate and execute designs for advertising, packaging, display, book decorations, wall decorations, stained glass, textiles, and other purposes. In addition, instruction is given in the design of industrial products from the standpoint of appearance. Application of design in craft work is included. Throughout the course, the modern, expressive and functional concepts of design are emphasized.

INTERIOR DECORATION

This program prepares the student for the professional field. Emphasis is placed on the creative or design area of the subject. Period styles are studied and various techniques of drawing are required in rendering. The psychology of color is an important part of the course. Every effort is made to develop original expression.

PROGRAM OUTLINE

The selection of a major in one of the three fields before mentioned, determines the core curriculum for the individual schedule of the student:

1st YEAR	2nd YEAR	3rd YEAR
Composition	Art Anatomy	Design III
Design I	Color	Drawing III
Drawing I	Design II	Ethics
History of Art	Drawing II	Fashion Illustration
Hygiene	History of Art	Illustration II
Interior Dec. I	Illustration I	Interior Dec. III
Mem. Dr. and Sketch	Interior Dec. II	Life Drawing II
Modeling	Lettering	Life Modeling
Perspective	Life Drawing I	Mem. Dr. and Sketch
Physical Ed.	Mem. Dr. and Sketch	Oil Painting II
Psychology	Oil Painting I	Pen Rendering
Show Card Writing	Physical Ed.	Pencil Rendering
	Poster Design	Physical Ed.
	Social Orientation	Water Color
	Typography	

The Institute reserves the right to modify any of its courses at any time.

METHOD OF INSTRUCTION

The use of a series of scales composed of student work, assists the student to measure his progress in the various mediums taught. Approval incentives are expressed when merited, but the student's standard is constantly measured against professional requirements. Practical application of creative art to present commercial and industrial requirements is a major consideration.

A plan of individualized instruction gives the student the opportunity of progressing as an individual. This plan also permits flexibility in elapsed time assigned to validated courses.

ART SCHOOL LIBRARY

As individuals or groups reach a point in their study when special counsel is advisable, provision is made for it.

The program of instruction is based on the recognition that technical training covers only a part of the total pattern of the individual's growth. Therefore a conscious effort is made to counsel and stimulate the student in the direction of a well balanced character, and to point out the vital necessity of self directed effort before and after graduation.

ART TEACHER PREPARATION—COMBINED COURSE

Students interested in art teacher preparation may enroll at the University of Rochester and pursue art courses at the Institute. This combined course is approved by the University of the State of New York and leads to a New York State Certificate for public school art teacher. Further information may be obtained from the Department of Education, University of Rochester.

DESCRIPTION OF COURSES

ART ANATOMY is a lecture course dealing with the bony and muscular structure of the human figure as related to figure drawing. A notebook with drawings is required.

COLOR. This course enables the student clearly to understand the interrelation of visual color qualities. With color thought and language organized, the various sources for color harmony and contrast, spontaneous, historic, naturalistic and schematic, are studied. This is closely associated with the current problems in design. All the important color systems, based on the variations of light and pigment modifications, are considered.

COMPOSITION deals with picture structure. It comprises problems in space relation in simple outline, and includes the study of the essential principles of space filling. Emphasis is placed on the understanding of notan, or dark and light. Perspective and the picture plane are studied. Drawings of original conceptions from definite assignments are carried out in black and white, and color. Various mediums are used.

DESIGN I deals with the creation and delineation of decorative shapes and arrangements by adaptation and origination. It includes preliminary training in the use of color, and the application of the principles of design. The student is guided in the development of esthetic taste and judgment. Pen and ink, and tempera are the mediums used.

DESIGN II provides advanced work in the origination and adaptation of pattern and decorative arrangements with emphasis on methods of construction and decorative space filling. A comprehensive study of the theory of color is included. Understanding and application of the principles of design are further developed through drawings or models.

DESIGN III includes individualized projects in various fields, comprising design for advertising purposes, book decoration, architectural decoration, ecclesiastical stained glass, industrial and textile design, decoration for screens and panels. Commercial and industrial requirements are made the basis of the work, but the standards are those of fine art. Originality of conception and artistic excellence are emphasized. Individual abilities in special directions are brought out.

DRAWING I serves the purpose of orientation to the subjects and techniques of graphic representation. Exercises and drills demonstrating the graphic processes are introduced. As the work progresses, the study is carried on from still life and plaster casts, providing practice in composition and proportion, separation of dark and light, development of multiple tone, representation of surfaces, textures and accents. Freehand Perspective is included. Various mediums are used.

DRAWING II is a continuation of the application of the principles of Drawing I as applied to the costumed figure model. In addition, anatomical action and figure construction are studied. Dynamic draftsmanship leading to dramatic effects of light and shade, is encouraged. Most of the work is carried on in black and white. Color is also used.

DRAWING III offers opportunity for further study of the principles required in Drawing II. In addition to these emphasis is placed on style and spontaneity. The techniques of various mediums are explored and the student discovers that medium which he can use with greatest facility, applying it as a means of individual expression.

ETHICS. A course designed to meet the need of the art student with regard to the ethical problems of present day society.

FASHION ILLUSTRATION deals with the solving of the problems of newspaper fashion layout and general fashion illustration.

HISTORY OF ART is a lecture course which covers the great developments of architecture, painting, sculpture and ornament from prehistoric times to the present day. Special attention is given the social, religious, political, artistic and personal influences which have moulded great art expression. The study broadens the student's conception of art. An illustrated notebook is required.

HYGIENE for freshman women consists of discussions of personal hygiene to promote the general health of the student.

ILLUSTRATION I reviews the principles of space filling as taught in Composition, and further develops picture structure. Assignments include problems in illustration for advertisements and stories through which the student becomes familiar with the requirements of original conception and the technical problems for reproduction. Various mediums are used.

ILLUSTRATION II reviews and summarizes the work of Composition and Illustration I. It emphasizes the importance of accuracy and appropriateness in story and advertising illustration. It further provides the opportunity to express emotional qualities in drawing. Mediums are individually selected and used.

INTERIOR DECORATION is designed to train the student for the professional field. It includes problems in the major decorative styles. Originality is encouraged in interpreting the essence of these styles for present day requirements. The student is thoroughly drilled in the fundamentals of color and design, specifically as to their application to interior decoration. The course entails considerable research on the part of the student, and the drawing of elevations, both plane and in perspective.

LAYOUT. This course covers the design and layout of such items as books, folders, booklets, broadsides, advertisements and containers. The student is taught to prepare roughs, comprehensive layouts and finished work for reproduction. A survey of the various processes by which commercial designs and illustrations are reproduced is included.

LETTERING is the study of various styles of alphabets for proportion and construction. Projects stressing appropriateness of lettering include designs for title pages, illuminated resolutions, book jackets and display advertising. Black and white, and color mediums are used.

LIFE DRAWING I consists of drawing from the human figure in action and repose for the purpose of gaining a knowledge of the construction and proportion of the human figure. Pencil, charcoal and crayon are the mediums used.

LIFE DRAWING II consists of drawing for the purpose of detailed study of the human figure with emphasis on anatomical construction, perspective, effects of light and shade, and textures. Pencil, charcoal, crayon, or other mediums individually selected, are used.

LIFE MODELING consists of modeling in plasticene from the living figure in relief and in the round. This is an invaluable aid in developing a feeling for mass and structure in drawing.

MEMORY DRAWING AND SKETCH deals with the problems of making rapid sketches from the model supplemented by the study of Models in Motion using motion pictures, thereby stimulating powers of observation and developing facility in drawing.

MODELING gives opportunity for the study of third dimensional form. Original adaptations of simple relief, and rosettes based on historic ornament are modeled in clay. Fragments, heads, and architectural decorations are studied. Bas-relief of original figure compositions, and modeling from life in relief and the round, are included. Practice is given in the making of plaster casts.

OIL PAINTING I gives practice in the technique of the use of oil pigments through exercises in painting from still life groups with suitable backgrounds and planned illumination. The study of major relations of color is emphasized. An essential part of the course consists of the rapid painting of many small panels. Larger and more detailed studies are eventually made.

OIL PAINTING II. The use of oil pigments and the principles of color relation as studied in Painting I are applied to painting from the costumed figure model. The work is directed toward the objectives of illustration and advertising, as well as portrait painting. The development of individual techniques through the solving of advanced technical problems constitutes an important part of the class work.

PEN AND PENCIL RENDERING consists of drills and exercises in the use of pencil and pen and ink techniques. Various motifs including still life, landscape and figures are employed. The student is encouraged to experiment with various kinds of pens and pencils to develop an individual technique.

PERSPECTIVE deals with the fundamentals of parallel, angular and curvilinear perspective. It also covers perspective projection. Drawings are executed with the use of drafting instruments.

PHYSICAL EDUCATION for all women offers a program for physical activities, including gym, corrective exercises, swimming, bowling, riding, basketball, tennis and golf.

POSTER DESIGN consists of the theory and practice of modern poster making in the fields of industry, transportation and the theater. Assignments incorporating actual commercial practice are carried out. Most of the problems are executed in tempera and water color. Other mediums may be used.

PSYCHOLOGY covers the general principles of elementary psychology as applied to everyday life. It is primarily a discussion class, but definite assignments are given and required of the student.

SHOW CARD WRITING consists of freehand brush rendering of various alphabets. It includes show card writing, display signs, window cards and price tickets. The mixture and use of color are studied including color harmony and contrast. Instruction is given in the use of various kinds of lettering pens.

SOCIAL ORIENTATION deals with the social problems related to the art student and his selected profession. It covers current developments in the field of social relations, the problem and case method of discussion being used.

TYPOGRAPHY familiarizes the student with the styles of type, sizes, measurements, copy fitting and the problems of the compositor in setting work from layouts. Students prepare layouts from which they actually set the type.

WATER COLOR begins with black wash and continues without the use of chromatic color until an appreciation of form and mass is evident. Work in color, from still life and flower forms, follows. Later there are composition sketches in water color. A sufficient number of still life groups are executed to give the student a clear understanding of water color as a painting medium.

SATURDAY MORNING CLASS. A class for children between the ages of twelve and sixteen years is held on Saturday morning from 9 to 11:30 o'clock. This provides an introduction to the subject of drawing. The work includes composition, poster design and sketching from the costumed model. Tuition is $7.50 per semester. Children furnish their own materials which are estimated at $1.50 per semester.

CO-OPERATIVE INDUSTRIAL CHEMISTRY PROGRAM

THE Co-operative Industrial Chemistry program has for its objective the preparation of students for employment in industries wholly or partially chemical in nature, and in chemical control and analytical laboratories. Graduates hold a great variety of positions such as laboratory technicians, analytical chemists, technical salesmen, specialists in chemical manufacturing, technicians in the fields of industrial development, experimentation and research, as well as supervisory positions.

Applicants are expected to be familiar with the occupational field in chemistry. Vocational Guidance Pamphlet No. 3 described on page 9 presents information about work available, requirements for promotion, and other material about this field. This pamphlet will be sent upon request. Class-room and laboratory training at the Institute and co-operative experience further aid students in directing attention to the attainment of one of several possible goals. Completion of the chemical program and subsequent experience opens the way to numerous responsible positions connected with supervision, engineering, production, sales, and management in a variety of chemical plant processes.

Upon beginning this course, each chemical student selects the goal toward which he will work. In this selection, the counselor offers information and advice. Once the objective is set, the student devotes his energies to attaining it. If it later becomes apparent that the first selection is unsuitable, the objectives can be modified or completely changed.

The Industrial Chemistry program is based on a survey of the activities of a number of jobs performed by chemists and chemically trained men in the chemical industries of Rochester, Niagara Falls and other cities and towns of

central and western New York. The student is therefore trained definitely for the basic jobs appearing on the job charts printed in the Vocational Guidance Pamphlet No. 3.

While each industry in which a student or graduate may be employed requires specialized information and applications, there is a common basic requirement for all industries. The curriculum makes adequate provision for this basic requirement and, in addition, offers much specialized instruction for the student whose objective requires it.

The demand for women with training in Chemistry has increased greatly during the present war emergency. Almost without exception, the same opportunities are available for women co-operative students as for men students.

Throughout the course there are continued practical applications of chemical facts, principles and procedures to manufacturing processes. The development of techniques for rapid, accurate, routine analyses, and the ability to think in terms of large quantities, continuous processes, and efficient operation are major objectives of the courses.

Employed students may elect to carry out processes which are related to their plant or laboratory work. In all cases, the student's own objective determines his program to a considerable extent.

LABORATORY EQUIPMENT AND FEES

The chemical laboratories are equipped to give the necessary instruction and practice in analytical and industrial work, both organic and inorganic. In addition, chemical students use the mechanical and electrical laboratories, both of which are well equipped for this purpose.

During the third year, students are assigned to the technological laboratory where chemical manufacturing processes are carried out on a small scale using metal equipment. In this laboratory, the equipment includes an oven dryer, a power filter, mixing vats, an open evaporator, a still pot and fractionating column, a vacuum evaporator, and grinding equipment.

The laboratory fee for the Chemistry Course is listed on page 20 as $20. Of this total fee, $12 is applied as an overhead charge to help pay the fixed costs of operating the laboratories, and no part of this fee will be returned to the student. The remaining $8 is a breakage deposit, against which are charged additional equipment and supplies which are used by the student. Any part of this deposit which is not used may be returned to the student at the end of the school year.

ENTRANCE REQUIREMENT

See pages 10 and 11 for a general statement of entrance requirements. In addition, one year of high school chemistry is required. Industrial experience in a chemical laboratory or in chemical manufacturing may be substituted for high school credits with the approval of the counselor.

DISTILLING AND RECTIFYING EQUIPMENT IN THE TECHNOLOGICAL LABORATORY

PROGRAM OUTLINE

FIRST YEAR

	Hours per week
General Chemistry Theory	4
General Chemistry Lab.	3
Qualitative Analysis Theory	2
Qualitative Analysis Lab.	6
Mathematics I	3
Mechanical Drawing	4
Mechanics and Heat	3
Psychology	3
Study Techniques and English	2

SECOND YEAR

	Hours per week
Organic Chemistry I Theory	3
Organic Chemistry I Lab.	3
Quantitative Analysis Theory	5
Quantitative Analysis Lab.	9
Mathematics II	2
Electricity	3
Industrial Economics	3
Chemical Literature	2

THIRD YEAR

	Hours per week
Industrial Chemistry	2
Technical Analysis	6
Organic Chemistry II Theory	2
Organic Chemistry II Lab.	3
Physical Chemistry	5
Unit Operations Theory	4
Unit Operations Lab.	4
Industrial Management	3

The courses and the amount of time scheduled are subject to modification to meet the requirements of the student's job objective. Special programs for those who expect soon to enter the armed forces will be arranged to fill the training needs for several of the specialized branches of the service. The Institute reserves the right to modify any of its courses at any time.

DESCRIPTION OF COURSES

FIRST YEAR

MECHANICAL DRAWING I. This course offers practice in the skills ordinarily required of the draftsman, use of instruments, lettering and inking. A minimum number of drawings are required of each student. These involve geometric construction, perspective, third angle projection, equipment layout, detail and assembly drawings. Rapid workers and those who have acquired drafting skills previous to admission may elect additional units.

QUALITATIVE ANALYSIS. The classroom work is devoted to the study of ionization, solubility-product principle, precipitation, common ion effect, etc., and to the writing and balancing of equations. In the laboratory, a careful study is made of the best methods of detection, separation and recognition of the common elements and compounds in both the crude and refined state. The unknowns used in practice work, are, as far as possible, typical commercial products.

GENERAL CHEMISTRY. Starting with a review of high school chemistry, this course continues with a more complete consideration of important fundamental principles, type reactions and important properties and uses of representative products. The characteristics, uses, chemical properties and methods of production of common industrial products receive special attention. Applications of principles in practical situations to typical industrial methods aid the student in relating technical instruction to his co-operative job. Special attention is given to the co-ordination of instruction with qualitative analysis.

PSYCHOLOGY. Problems, cases, and essential experimental material from the field of psychology are selected and presented in this course to give to the student a general introduction to industrial and business personnel practice. The aim is to develop further in the student a scientific and open-minded approach to the problem of handling one's self and others in human relationships.

MATHEMATICS I. A brief review of the fundamental principles of algebra is followed by additional topics from trigonometry and analytical geometry. This course emphasizes the construction and use of charts and the writing of laws to fit observed data. Facility in the use of logarithms and the slide rule is required. Students solve numerous problems making applications in chemistry and physics and prepare a number of charts and graphs.

PHYSICS. A brief course is offered covering the fundamental principles of mechanics, including consideration of analysis of force diagrams, conditions of equilibrium, work, power, elements of machines, friction, and properties of liquids and gases. Laboratory work includes a complete set of experiments illustrating theory offered in class. About one-half of the time is devoted to a study of the fundamental concepts of heat, calorimetry, expansion, heat transfer, change of state, fuels, energy and applications to industrial uses.

STUDY TECHNIQUES AND ENGLISH. This course aims to assist students in acquiring efficient and effective study habits as well as to correct faulty use of English, both oral and written. Tests given to each student disclose his own difficulties and permit him to concentrate upon their correction.

SECOND YEAR

ECONOMICS. A series of economic problems and cases are arranged to focus the student's attention upon the principles that underlie industrial and business organization, to afford opportunity for constant practice in writing and discussion on current issues confronting him, and to develop a scientific and open-minded approach to his own economic problems and the problems of the organization of which he is a part.

ELECTRICITY. This course presents the electrical theory commonly needed in chemical engineering or in chemical laboratory practice. Students become familiar with electric symbols, units and diagrams in preparation for the solution of problems involving series and parallel circuits, power factor, electrical energy, efficiency and the measurement of voltage, current, and power in a.c. and d.c. circuits. A unit on motors presents operating principles. The theory, operation and application of transformers and generators and a consideration of electroplating complete the course. Students are required to solve numerous problems and to perform laboratory experiments, illustrating the theory studied.

MATHEMATICS II. The work of the first year continues with emphasis upon topics from the calculus. Differentiation, and simple integration with applications to problems drawn from chemical engineering and physical chemistry require the major portion of the time allowed. Major emphasis is placed upon the development of ability to solve mathematical problems occurring in the professional courses.

QUANTITATIVE ANALYSIS. The classroom work consists of a study of the elementary theory of pH and hydrogen ion and the solution of problems applicable to the quantitative determination of metallic and non-metallic elements. In the laboratory, students make quantitative determinations of substances in both refined and raw states by using volumetric, gravimetric, electrometric and electrolytic methods. Considerable attention is given to analysis for industrial control with application to the student's special field. The selection of compounds or mixtures for analysis as well as the elements for which the determination is made may vary for each student.

ORGANIC CHEMISTRY I. This course covers the chemistry of the carbon compounds and their derivatives, alcohols, ethers, aldehydes, carbohydrates and the like. Many direct applications to the soap, dye, gas, oil, rubber, pulp and other industries are made. Students may devote a portion of their time to meeting special job requirements. The laboratory work is designed to offer practical experience in the preparation of organic chemicals, such as halogenation, condensation, oxidation, reduction, hydrolysis, amidation, and other reactions. A study is made of the various types of equipment. Students may select some of their laboratory work in terms of their own interests.

CHEMICAL LITERATURE. (See page 59.)

THIRD YEAR

INDUSTRIAL MANAGEMENT. This course, following the courses in psychology and economics, is planned to give the student an all-round view of industrial organizations. The various functions of management are studied separately and the students are required to read from managament literature and to report their observations in the plants in which they work. Line and staff control, maintenance, inspection, and scheduling are examples of the material covered.

INDUSTRIAL CHEMISTRY. This is a study of manufacturing processes and methods of manufacture of chemicals and allied products on a small and on a plant scale. A study of the manufacture of such products as sulphuric acid, nitric acid, caustic soda, and soda ash illustrates the use of typical equipment.

UNIT OPERATIONS. To bridge the gap between the conventional chemical laboratory and the chemical production plant, the Unit Operations Course offers theory and practice in a laboratory equipped with small scale apparatus. This includes a filter press, tanks, pumps, grinding equipment, an open evaporator, an oven dryer, mechanical evaporator, a water softener, a still with a fractionating column and measuring and control instruments. Complete chemical processes are carried through enabling the student to work under conditions somewhat similar to those found in production. Operation of power equipment, steam engine operation, transportation of material, flow of heat, crushing and grinding, filtration, sedimentation, evaporation and distillation are some of the processes studied. In this laboratory, students work in groups under a student foreman. The foreman plans the work, directs the group, verifies the results and plans the report.

ORGANIC CHEMISTRY II. A continuation of Organic Chemistry I. Hydrocarbons, nitro compounds, dyes and other important compounds of the aromatic series or the benzene system are studied. Additional time is given to a continuation of second year organic laboratory. This work includes the preparation of aromatic compounds, by such processes as nitrations, sulphonations, etc. A study is made of the laboratory equipment for carrying out these processes. An increased amount of time is available for students in which to carry on work suited to their co-operative jobs and personal objectives.

TECHNICAL ANALYSIS. Practice is given in analyses of typical industrial materials similar to those encountered in works laboratories. Topics considered include sampling, standardization methods, speed tests on common acids, bases and oxidizing-reducing agents, industrial analysis of water, analysis of iron and steel, gas analysis, analyses of coal and coke, lubricating oils and motor fuels. To a limited degree, choice of materials to be analyzed is dependent upon student interests.

PHYSICAL CHEMISTRY. This course presents the fundamental principles of physical chemistry which are essential to the understanding and carrying out of the subject matter in the Unit Operations Course. Considerable time is devoted to the advanced study of principles introduced in General Chemistry, Qualitative and Quantitative Analysis, such as principles of gases, liquids, and solids from the chemical viewpoint, thermo-chemistry, and thermodynamics; an advanced study of solutions with experiments on Rauolt's and Henry's law; a study of homogenous equilibrium with especial reference to pH or Hydrogen ion and indicators; heterogenous equilibrium with experiments on elementary principles of phase rule, and solubility product determination.

CO-OPERATIVE ELECTRICAL PROGRAM

TESTING MOTORS AND GENERATORS

THE co-operative electrical program provides theoretical and practical training for young men who seek careers in the electrical field. Graduates of this program find employment in many branches of the industry, such as, the fields of electric power generation and distribution, construction and maintenance, railway signalling, communication, and sales and service of electrical equipment. Students are aided in securing and making the necessary adjustments to co-operative employment. A counselling service based on scholastic and personnel records from employers and faculty is maintained to help students in establishing and evaluating their goals. Special interest and aptitude for various types of electrical work, experience and promotional opportunity offered by the co-operative job, and scholastic progress, are valuable factors in establishing definite training objectives. Applicants are expected to have some knowledge of the types of work and opportunities available in the electrical industry. A vocational guidance pamphlet, "If You Are Considering a Career in the Electrical Field" will be sent upon request.

INDIVIDUALIZED INSTRUCTION

A system in which emphasis is placed upon the instruction of the individual rather than instruction of the group has been developed and used for several years by the Electrical Department faculty. Each student progresses through carefully prepared manuals at a pace governed by his ability. The divisions of a typical manual, called units, contains reading assignments, questions, problems, and laboratory experiments. A mastery test is given at the end of each unit, and if successfully passed, the student is permitted to proceed with the subsequent unit. The instructor functions as a consultant and counselor rather than lecturer, and helps each student individually with his particular difficulty as the need arises. No attempt is made to retard the rapid worker who is meeting quality requirements, nor is the slow worker speeded beyond his ability to master the subject.

The weekly schedule of classes totals approximately 30 hours. Most students find it necessary to devote eighteen hours per week additional time to study during the school period, and are expected to study during the evenings of the work period, in order to maintain a satisfactory rate of progress. Students of average ability, who are adequately prepared at entrance, are able to complete the requirements for the Institute's co-operative electrical diploma in three years of conscientious work. The rapid worker who completes minimum requirements before the end of the third year may enrich his course by scheduling additional work. The slow worker may require more than three years to complete the course.

Much of the time during the first two years is spent with fundamental subjects, such as mathematics, mechanics, thermodynamics, and electric and magnetic circuits. These form the foundation for the application courses which follow during the latter part of the second and throughout the third year. In addition to a varied rate of progress, the system of individualized instruction permits each student to select from a large variety of application units those which are closely associated to his training objective.

ENTRANCE REQUIREMENTS

See pages 10 and 11 for entrance requirements. Much attention is given to the applicant's high school record in mathematics, science, shop, and drawing. The classification examination in mathematics presumes at least two years' high school work in this subject.

EQUIPMENT

The Electrical Laboratory contains a large number of motors and generators and their control equipment, transformers, capacitors, inductors, resistors, component parts of communication systems, and a large stock of high grade electrical instruments and special testing equipment. Much of the equipment is representative of, or selected from, apparatus with which the student will be dealing either as

a co-operative or graduate employee. The laboratory is spacious, well lighted, and has both direct and alternating current service.

The department office adjacent to classrooms is equipped with a branch library containing reference texts, handbooks, catalogs, and current periodicals representative of many branches of the electrical field.

PROGRAM OUTLINE

FIRST YEAR

	Hours per week
Electricity (including Lab. and Class)	12
Mechanical Drafting	5
Mathematics	5
Machine Shop	3
Psychology	3
Seminar	2
Study Techniques and English*	

SECOND YEAR

	Hours per week
Electricity (including Lab. and Class)	12
Electrical Drafting	6
Mathematics	4
Mechanical Fundamentals	4
Economics	3
Seminar	2

THIRD YEAR

	Hours per week
Electricity (including Lab. and Class)	12
Electrical Design	6
Mathematics	4
Mechanical Applications	4
Industrial Management	3
Seminar	2

CONTROLLING CIRCUITS AT MAIN SWITCHBOARD

**Scheduled for not more than two hours each week in connection with other subjects. The courses and the amount of time scheduled are subject to modification to meet the requirements of the student's job objective. The Institute reserves the right to modify any of its courses at any time.*

DESCRIPTION OF COURSES

FIRST YEAR

ELECTRICITY—DIRECT-CURRENT AND MAGNETIC CIRCUITS. Topics for study consist of electron theory, elementary wiring diagrams, series and parallel circuits; magnetism and electromagnetism; measurement of voltage, current and resistance; direct-current instruments; use of the wire tables; change of resistance with temperature; electrical power and energy; batteries and battery circuits; calculation of the magnetic circuit; inductance and capacitance. Classroom work is supplemented by laboratory experiments which require approximately one-half of the time allotted to this subject.

MECHANICAL DRAFTING. Drafting problems offered in this course develop skill in the use of drawing instruments; lettering; inking; geometric construction; third angle projections; freehand sketching; and isometric, oblique, detail and assembly drawing.

MATHEMATICS. The first month is spent reviewing high school geometry and algebra, and instructing the student in the use of the slide rule. This is followed by advanced work in algebra, logarithms and graphs. The last month is devoted to trigonometry.

MACHINE SHOP. Projects in bench work and use of the machine tools are given in this course. Problems in cutting, reaming and threading conduit as well as in the use of the lathe, drill press, milling machine, shaper and automatic grinder are provided as practice work.

PSYCHOLOGY. Problems and cases illustrating the basic principles of psychology and the application of these principles to adjustment of the individual to his environment, comprise the contents of this course. Each student keeps a note book and gets constant practice in spoken and written English.

SEMINAR. Lectures and discussions on technical subjects, and topics of general interest are taken up in this course. Speakers are drawn from the class, the faculty and several guest speakers are invited each year. A portion of the time is devoted to group guidance. This program is continued during the second and third years.

STUDY TECHNIQUES AND ENGLISH. This course aims to assist students in acquiring efficient and effective study habits as well as to correct faulty use of English, both oral and written. Tests given to each student disclose his own difficulties and permit him to concentrate upon their correction.

SECOND YEAR

ELECTRICITY—ALTERNATING-CURRENT CIRCUITS. Topics of study are: definitions, a-c waves; resistance, inductance and capacitance in a-c circuits; power and power factor; graphical solution of vectors; complex quantities; a-c series and parallel circuits and polyphase a-c circuits.

ELECTRICITY—ELECTRICAL APPLICATIONS. The student selects from a large variety of topics or units, those which best meet his specific needs. This selection is made with the advice of the faculty, supervisor and co-operative employer. The individual program arranged at this time extends throughout the third year of the course. Typical application units are listed under third year electricity.

ELECTRICAL DRAFTING. Drafting problems in this course consist of detail drawing of electrical apparatus, wiring diagrams, schematic diagrams, one line diagrams, and switchboard design.

MATHEMATICS. The more advanced trigonometry required for the solution of a-c circuit problems is given during the first half of this course. This includes: functions of the sum and difference of angles; functions of the half and double angles; laws of sines, cosines and tangents; trigonometric identities and equations; graphs of trigonometric functions; and applications of the above to a-c circuits. The second half of the course is devoted to the study of analytic geometry.

MECHANICAL FUNDAMENTALS. Elementary study of thermo-dynamics, statics and dynamics. Some of the items considered are heat units; thermometry; specific heat, expansion and contraction; gas, air and water vapor; steam; forces and force vectors; center of gravity; moment of inertia; methods of mounting and bracing pipes and machinery in buildings; acceleration; and mechanical drives.

ECONOMICS. Economics and its application to industry. Each student may select from a large number of problems and cases those which best apply to his own needs. There is, however, adequate mutual interest in certain problems to offer students the experience gained in the conference method of group work.

THIRD YEAR

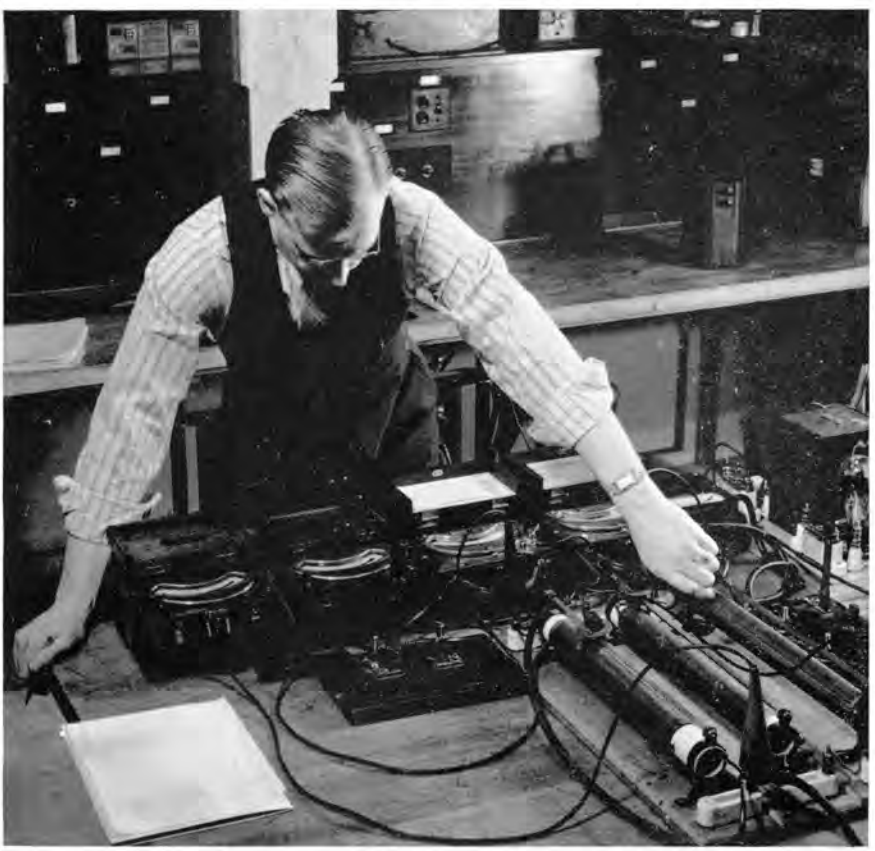
ELECTRICITY—ELECTRICAL APPLICATIONS. The program selected by the student during the latter part of the second year is continued throughout the third year. Laboratory work requires approximately one-half of the allotted time. As a normal load each student completes from fourteen to twenty units. Typical of the units from which selection might be made are: principles and operation of direct-current motors and generators; transformers, principles of operation and connections; the polyphase induction motor; single-phase motors; alternating-current generators; synchronous motors; synchronous converters; vacuum tube characteristics; measurements in electronic circuits; wiring for power and light; railroad signalling systems; power rates; engineering economics; lighting; and telephone apparatus.

ELECTRICAL DESIGN. This course consists essentially of electrical layout design problems. Each student has an opportunity to select from a variety of problems those which best suit his needs. Some of the problems offered are: transformer bank installation for a small factory; layout of a power and lighting system in a small factory; installation and wiring diagram of a manual or automatic controlled motor generator set or rotary converter; installation of an induction voltage regulator station; telephone layout of a building using a private branch exchange; layout and wiring diagram of an audio frequency amplifier; design of a railway signalling tower.

MATHEMATICS. Differential and integral calculus is studied in this course. The course is optional, and those students who do not elect third year mathematics are required to schedule four additional hours in electricity.

MECHANICAL APPLICATIONS. Units available are: properties of materials; strength of materials; power plant equipment; heating and ventilating; refrigeration and air conditioning; surveying; and drives and mechanisms. The average student has time for three units and may select those in which he is chiefly interested.

INDUSTRIAL MANAGEMENT. The basic principles of economics and psychology as studied in the first two years are carried further in their applications to general management. This course gives the student a picture of the management set-up, principles of management involved, and best practices in the industrial field. There is opportunity for individual selection of problems and cases, but as in Economics there is adequate mutual interest in certain problems to make use of the conference method.



TESTING RECTIFIER CIRCUIT

CO-OPERATIVE FOOD ADMINISTRATION PROGRAM

THE MAIN KITCHEN

THERE has never been a time in the history of this country when women trained in food administration were in such demand as they are to-day in industrial cafeterias, hospitals, and countless other places where large groups of people must be fed. Young women who like to work with food will find in the field of food management and dietetics an ideal opportunity for service. Providing attractive, healthful food for group-feeding is an essential service even in normal times; to-day, in time of national emergency, the need for trained women is critical.

Students in the three-year co-operative Food Administration course at the Institute alternate four weeks at school with four weeks on co-operative jobs in food-service establishments of Rochester and Western New York. The program is directed toward food management and consists of four general areas of training: (1) knowledge and skills in food preparation; (2) science in relationship to foods and nutrition; (3) training for business control of a food-service department; and (4) liberal courses for all-round personal development.

The kitchens which serve as laboratories for foods training are modern and complete. Tile walls and floors provide an immaculate, attractive setting for up-to-date equipment of monel metal and stainless steel. All students have professional experience in these kitchens, and all food preparation is done by students. The main kitchen provides dinner for dormitory students in addition to cafeteria luncheon, which has daily patronage of 300 to 375 persons. The catering kitchen serves special luncheons, dinners, and teas; one or two such occasions are scheduled each week.

Success in food administration, as in any other field, is an individual matter. Liking to work with foods, interest in people, and abundant energy are characteristics that make for success. Positions into which young women go after graduation include manager of a small foods department as in a school cafeteria or residence hall; assistant manager in a commercial restaurant, industrial cafeteria, or college dormitory; assistant dietitian in a hospital dietary department; or junior executive position in a large food-service unit, as for example, head of salad section, supervisor of fountain or counter service, cashier and office assistant, or kitchen supervisor. Responsibility, leadership, and willingness to go beyond the requirements of the immediate job are essential factors in advancement. The demand for trained workers exceeds the supply all along the line, and the shortage is particularly keen at the top, where the demand is for mature, experienced, competent managers or dietitians who handle large-scale operations at excellent salaries. More detailed information about the food administration field will be found in the vocational guidance pamphlet, "If You Are Considering Food Administration."

FOOD ADMINISTRATION CURRICULA

Commercial Food Management is the basic course in food administration and leads to excellent opportunities for pleasant, well-paid positions as food managers or dietitians. College dormitories, private clubs, industrial cafeterias, school cafeterias, Y. W. C. A. residence houses and the like provide varied types of positions that appeal to the varied talents and interests of young women trained in food administration. Commercial restaurants, cafeterias, and tea rooms offer outstanding opportunities for financial success. Institute students work as co-operative apprentices in a variety of food establishments, helping to prepare and serve food; they earn cash wages of $8.00 to $20.00 per week, receive meals while working, and in some cases receive full maintenance. Many students in commercial food management have financed a major part of school costs out of co-operative earnings.

Hospital Dietetics is planned to meet the specialized need of hospitals in the use of diet to treat disease. Since the hospital dietitian must know how to administer the entire food service of the hospital, students receive a thorough background in food management as well as training in diet therapy.

They also acquire practical experience in dietary departments as co-operative student dietitians, performing various duties in the preparation and serving of food during the first two years, and in senior year usually working exclusively in the diet kitchen, where they receive intensive experience in special diets. They live at the hospital during work periods and receive full maintenance.

ENTRANCE REQUIREMENTS

See pages 10 and 11 for a general statement of entrance requirements. In food administration, students may be accepted below 18 years of age if high-school graduates. High-school chemistry is desirable, but is not required for admission. Health and pleasing personality are important entrance qualifications for would-be food administrators.

PROGRAM OUTLINE

FIRST YEAR

Principles of Cookery
Art in Institutions and Homes
Institution Equipment
Cafeteria Counter Service
Chemistry I
Orientation
Psychology
Study Techniques and English
Applied Arithmetic
Physical Education

SECOND YEAR

Chemistry II (Required for Hospital)
Dietetics I
Accounting I (Required for Commercial)
Food Purchasing
Physiology and Hygiene
Food Production and Cost Control
Economic Problems
Physical Education

THIRD YEAR

Institutional Management
Accounting and Food Control II
Cafeteria Supervision
Dietetics II
Food Bacteriology
Diet in Disease (Required for Hospital)
Dietary Education (Required for Hospital)
Catering
Art in Tea Rooms and Clubs (Required for Commercial)
Philosophy and Social Problems
Physical Education

THE INSTITUTE CAFETERIA

The courses stated above are subject to modification to facilitate meeting the requirements of the student's job objectives. The Institute reserves the right to modify any of its courses at any time.

THE STUDENT DIETITIAN CONFERS WITH THE NURSE ABOUT A PATIENT

DESCRIPTION OF COURSES

ACCOUNTING AND FOOD CONTROL I AND II. This course is designed to give the food manager or dietitian an understanding of financial operations and control of food costs. Practice is given in forms of record-keeping and accounting as applied to various types of food-service establishments. Methods of food control are studied, and the means of determining the break-even point of a business are analyzed. This course operates through both junior and senior years for commercial food managers; because of the added time used by hospital dietitians in studying chemistry and diet therapy, it is not possible to schedule accounting in junior year, and therefore a briefer course is given to hospital dietitians in senior year only.

ART IN INSTITUTIONS AND HOMES. This course develops an understanding of the principles of color and design and enables the food manager or dietitian to apply these principles professionally. Effective menu, counter, and tray set-ups; selection and arrangement of pleasing and attractive tablewares decorations, and interior furnishings; and appropriate and becoming costumes are studied. Students write reports of observation in food service organizations. Each student prepares a scale drawing of a floor plan of a room and arranges and selects the furnishings.

ART IN TEA ROOMS AND CLUBS. An analysis of decorative features, styles of dining rooms and table appointments illustrates the important factors to be considered in the selection of appropriate furnishings for varying types of clientele. Practice is given in planning consistent groupings and a study is made of the principles of flower arrangement. Display data and advertising are included and consistent use of promotional material is emphasized.

CAFETERIA SUPERVISION. The Institute Cafeteria is the laboratory for this course. For a period of time each senior manager or dietitian assumes responsibility for managing the

cafeteria. Students have an unusual opportunity to develop initiative, self-reliance and self-direction. Experience in food preparation and service, menu planning, purchasing, and personnel management aids students in meeting problems arising in any food organization serving the public. A written report of the student's work is required.

CATERING. This course gives the student practice in the art of fine cookery and experience in managing catering projects. Opportunities are offered for planning menus for special parties, estimating necessary food quantities, making out requisitions for supplies, and calculating costs. The student manages and organizes the work and supervises the preparation and service of the food. Training is also given in correct table appointments and standard methods of service. A complete financial report of each project is required.

CHEMISTRY I. This course is designed to acquaint the student with the facts and principles involved in the chemical changes constantly in operation in the body, both in health and in disease. Some time is also given to a study of the chemistry underlying cookery and cleaning processes. The course is not planned to cover the entire field of general chemistry. Among the topics included are the electronic nature of matter and its application to valence, ionization, hydrolysis, oxidation, and the chemistry of energy transformations and changes of state.

CHEMISTRY II. This course is an extension of Chemistry I, having in the main the same objectives. It is principally concerned with a more detailed and advanced study of foods and physiological processes. The course includes a study of carbohydrates, fats, and proteins and a consideration of the chemistry of living cells, blood, and digestion.

DIETETICS. This course is designed to help the student obtain a working knowledge of the essentials of an adequate diet, in order that she may select her own daily food properly, and understand how to provide adequate meals for others. A study of the scientific evidence which is the basis of nutrition aids in safeguarding the student against misleading pseudo-scientific food propaganda. The use of authoritative sources of information is stressed. The energy, protein, mineral and vitamin requirements of an adequate diet are studied.

DIET IN DISEASE. This course is planned for the student entering the field of hospital dietetics. Its purpose is to familiarize the student with modern theories of feeding in disease, in order that she may learn in what ways abnormal physical conditions may be benefited by changes in diet. Scientific and psychological phases of the dietitian's work are emphasized in the fields of nutrition and medicine, and instruction in the use of the best sources of information assists students in keeping abreast of new developments.

ECONOMIC PROBLEMS. This course aims to help students direct their lives intelligently by leading them to understand their place in the economic order. Discussion centers upon problems of government, economic organizations and activities, social life, and international relations.

FOOD BACTERIOLOGY. This course is designed to develop in the student a realization of the wide-spread occurrence of bacteria, yeasts, molds, and the changes brought about by these micro-organisms. Both beneficial and harmful types, as associated with foods, are studied, as well as methods of control of bacterial growth. Some time is given to an elementary consideration of pathogenic organisms, and ways in which immunity to these may be developed in the body.

FOOD PRODUCTION. The Food Production Course offers experience in preparing foods of good texture and flavor in large quantity and on schedule time. The laboratory work includes application of food principles, establishment of methods of procedure and standards of foods, and manipulation of modern equipment. The student learns to standardize recipes, to change recipes from a small quantity to a large quantity, to combine color in foods to make them attractive, and to combine textures of foods. This course is a prerequisite for catering.

FOOD PURCHASING. This course gives practice in food purchasing for an institution. Purchasing methods, policies, and problems are surveyed. Emphasis is given to sources of data and best ways of keeping up-to-date in this field. Studies are made of production, distribution, and storage of food supplies with a view to developing accurate judgment of quality, grades, and costs. Government specifications are used constantly for reference. Reports are given on how successful managers and dietitians actually organize and handle their purchasing departments. Lectures, demonstrations and exhibits are given by food experts. Trips are made to local markets.

INSTITUTION EQUIPMENT. Consideration is given to important features in design,

materials, and construction which need to be considered in purchasing equipment. Study is made of cooking, labor-saving, and refrigeration equipment. Operation, cleaning, and maintenance are stressed. Specifications, cost of installation, and physical principles applicable in the construction and use of equipment are considered. Field trips are made to Rochester hospitals, school lunchrooms, restaurants, and hotels to study equipment layouts in various types of food service organizations.

INSTITUTIONAL MANAGEMENT. In this course, senior students make a study of personnel procedure and management problems. The student becomes familiar with job specifications, job analysis, the laws applying to food-service institutions, the duties of the food administrator, and the desired qualifications for success in the field. Each student selects a special problem in which she analyzes the organization, and suggests practical changes for construction of equipment, for equipment layout, for selection and arrangement of furnishings, for personnel, and for policies of organization. She observes and studies similar problems in Rochester hospitals, cafeterias, and restaurants.

DIETARY EDUCATION. This course is a summary of work done in Dietetics and Diet in Disease, so that important considerations will be fresh in the mind of the student who is soon to be a hospital dietitian. Methods of teaching nutrition to nurses, student dietitians, and patients are discussed; courses of study, textbooks and reference materials are evaluated; the place of the dietitian in the hospital, and the code of ethics of the profession are carefully reviewed. The student becomes familiar with current literature in her field and learns to analyze it critically.

ORIENTATION is aimed toward helping the student adjust successfully to life at Rochester Athenaeum and Mechanics Institute, not only in school but also in social relationships and in co-operative work.

PHILOSOPHY AND SOCIAL PROBLEMS is a course for seniors in which the student is given practice in straight thinking and effective activity leading to a more satisfying professional and personal-social life. Two themes are emphasized: (1) helping the student to gain a broader knowledge of the structure and dynamics of society in general; and (2) aiding him in the formulation and understanding of the values toward which he may strive to achieve the most satisfying existence.

PHYSIOLOGY. In this course students acquire a general knowledge of the various parts of the human body and of their normal function. Among the topics studied are living matter in general, circulation of the blood and lymph, respiration, digestion, excretion, and the brain and nervous system. The importance of good hygiene is stressed throughout the course. Students study common pathological conditions with the object of determining how the given condition differs from the normal, how it might have been brought about, and by a better use of known hygienic procedures how some of these ills might have been prevented.

PRINCIPLES OF COOKERY. These courses include a study of the principles involved in food preparation. These principles, which are closely correlated with the practical work in classroom cookery, help the student to understand the causes of her success or failure in food preparation. Basic principles of menu-planning are included. Menus are planned for various types of institutions and for social occasions. During the course the student gains a knowledge of the relative proportions of basic ingredients in recipes. This enables her to revise unsatisfactory recipes and to make substitutions without lowering the quality of the food products.

PSYCHOLOGY. This course invites consideration of the basic principles of human relationships. It is concerned not only with the processional development of the student, but also with his growth as an individual who must participate in family, community, and governmental affairs. While the duties of dietitians and managers have been analyzed and have been used as the basis for selecting psychological principles to be considered, the course also includes principles applying to broader life areas.

APPLIED ARITHMETIC. Students whose entrance data indicate that they are likely to have difficulty with the mathematical applications required in their various technical subjects are scheduled for a course in applied arithmetic.

STUDY TECHNIQUES AND ENGLISH. Helps freshman students improve their mastery of correct English usage and clear expression. Study Techniques is designed to help freshman develop habits of efficient reading and study. It includes training in speed of reading, analysis of content in technical material, effective notetaking, time budgeting, use of dictionary, and organization of formal written work.

INSTRUCTION in the co-operative mechanical programs is offered to young men who are interested in mechanical work in industry and who wish to prepare for technical, production, or supervisory positions in these fields. Instruction at the Institute provides a foundation. It gives a broad insight into industrial processes and trains the student in scientific methods of analysis and investigation.

During the emergency, young women are encouraged to enroll for this program. Courses may be modified to meet the needs of individual students.

The practical experience gained in industry while in co-operative employment, coupled with technical training acquired in school, leads to advancement to positions in various phases of technical work such as production, power plant operation, machine design, and instrument making. Mechanical students and graduates are engaged in various processes of manufacturing optical instruments, typewriters, paper box machinery, automobiles, electrical equipment, airplanes, gas engines, steam turbines, machine tools, pumps, railway signalling devices, and many other products manufactured in Rochester and vicinity.

The faculty keeps in close touch with manufacturing methods and technical developments. Some members of the teaching staff enter Rochester industries for summer employment.

The equipment of the Mechanical Department may be classified in four areas. (1) The machine shop contains a wide variety of industrial manufacturing equipment and provides practice in the operation and use of machine and hand tools. (2) Connected with the machine shop is a heat treating room with a set of furnaces, pyrometers and other equipment used in the heat treatment of metals. (3) The mechanical laboratory is used in the study of heat and mechanics, power and heating equipment, steam and gas engines, and a variety of other mechanical devices. (4) In physical testing the combined resources of a metallographic laboratory, equipment in the mechanical laboratory and in the heat treating room are used to investigate the strength, hardness, and other properties of the materials used in industry.

As the result of much educational research, a system of individual instruction has been devised that works very effectively with the co-operative employment. Each student, working from carefully prepared materials, is permitted to progress at his own pace. The instructor acts as a guide and counselor, training the student to map out his own progress and assume responsibility for it. When a unit of instruction is finished, a mastery test is given and the student advances to other work without regard to the rest of the class. The instructor thus has the opportunity to deal with the individual student and his problems rather than with the class as a whole. Much greater diversification of subject material is thus possible to suit the special requirements of the student in his particular co-operative training job.

The Institute has conducted a comprehensive investigation of the job requirements of the fields for which it trains and the Mechanical Department curricula have been designed on this basis. The investigation indicates that there are five major training areas for the Mechanical Department. These areas cover: (1) supervision of factory production, (2) design of machines, (3) supervision of power and heating equipment, (4) junior engineering work, and (5) instrument making. The specific jobs associated with the above fields have been examined in detail and the subjects taught are largely based on them. However, the graduating student is not limited to these in his choice of a job, since the courses are fundamental to a great number of similar positions.

MECHANICAL DRAWING CLASS

In general, the students are scheduled for approximately thirty hours of class work a week. The courses are divided into three classes as follows: (1) service courses, which present the fundamental principles of mechanics, heat, drawing, and other subjects, including work in other departments; (2) professional courses, which contain material directly related to the work of industry, such as machine design, production planning, power and heating equipment; (3) liberal courses, which are devised to broaden the student's viewpoint in his industrial and social activities as a whole. These include psychology, economics, and industrial management. A considerable amount of time must be devoted by the student in outside preparation for his classes.

CO-OPERATIVE INSTRUMENT MAKERS PROGRAM

A modification of the co-operative mechanical program has been especially designed for the training of instrument makers and for those who wish to prepare for technical jobs in the machine and tool industries. This course follows approximately the same outline as the other three year co-operative mechanical program. Special emphasis is placed on accuracy in hand work and machine operations as related to the construction of instruments.

A vocational guidance booklet entitled "If You Are Considering a Career in the Mechanical Field—" is available upon request. This monograph gives information about the mechanical field, kinds of employment, lines of promotion, and discusses other factors of importance.

PROGRAM OUTLINE

MECHANICAL COURSE

	Hours per week
FIRST YEAR	
Mathematics	4
Mechanical Drawing	5
Machine Shop	12
Psychology	3
Mechanics and Heat	4
English and Study Techniques	2
SECOND YEAR	
Mathematics	3
Economics	3
Drawing and Mechanism	6
Electricity	6
Strength and Properties of Materials	6
Power and Heating Equipment	6
THIRD YEAR	
Production Planning	3
Machine Design	9
Materials Laboratory	3
Power and Heating Equipment	3
Industrial Management	3
Technical Projects	6
Elective	3

INSTRUMENT MAKERS COURSE

	Hours per week
FIRST YEAR	
Mathematics	4
Mechanical Drawing	5
Machine Shop and Instrument Making	12
Psychology	3
Mechanics and Heat	4
English and Study Techniques	2
SECOND YEAR	
Economics	3
Drawing and Mechanism	6
Electricity	6
Strength and Properties of Materials	6
Instrument Making	9
THIRD YEAR	
Optics and Sound	3
Instrument and Tool Design	9
Materials Laboratory	3
Instrument Making	9
Industrial Management	3
Technical Projects	3

The courses and the amount of time scheduled are subject to modification to meet the requirements of the student's job objective. The Institute reserves the right to modify any of its courses at any time.

DESCRIPTION OF COURSES

FIRST YEAR

STUDY TECHNIQUES. This course is required of all students whose performance on diagnostic tests indicates inadequate or faulty study habits; such as, incorrect eye movements while reading, cumbersome methods of selecting major ideas, vocabulary difficulties, or similar poor study habits. Instruction in study habits for those needing it will continue until the student demonstrates that his study habits have been sufficiently improved.

ENGLISH. A series of tests on grammatical usage and the basic elements of writing locates for each student his difficulties in English. By classroom discussion and by written exercises, students correct the faults which have been discovered through the tests. Course materials are prepared to permit each student to concentrate upon the portion of the work which he most needs to attain a satisfactory standard in both written and oral English.

MATHEMATICS. This course includes the following topics; algebra through quadratics; complex numbers; simultaneous equations; trigonometric functions of angles; identities; solution of right and oblique triangles. Use of the slide rule and logarithm tables is included in the instruction.

HEAT. This course is designed to present the fundamental principles of heat engineering as background for the advanced courses in power equipment and heating and ventilation. It includes the following topics; nature of heat energy; relation between heat, mechanical, and electrical energy; calorimetry; expansion of solids, liquids, and gases; conduction, convection, and radiation; and humidification. Laboratory work is given.

MECHANICS. This course is designed to present the fundamentals of mechanics as prerequisite material for the advanced courses in applied mechanics and strength of materials. It includes the following topics: parallelogram of forces, triangle of forces and force polygon, free body diagrams, movement theorem, conditions of equilibrum, couples, forces in space, friction, work and power, velocity and acceleration, inertia forces and other topics in linear and rotational kinetics.

MECHANICAL DRAWING. This is an introductory course in mechanical drawing, including instruction in the use of instruments, lettering, applied geometry, orthographic projection, developed surfaces and intersections, drafting conventions, machine drawing, assembly drawing, tracing, pictorial representation and technical sketching.

PSYCHOLOGY. In this course the student uses the principles of psychology that apply most directly to problems of leadership, covering such general topics as the interaction of native and environmental factors in personal development, incentives, discipline, learning and training, employment methods, influence of working conditions, and industrial relations.

MACHINE SHOP. The elementary machine shop course involves the use of both hand and machine tools with the major emphasis placed on the use of machines because of their universal use in modern production. Instruction is given in the techniques of handling lathes, milling machines, shapers, drill presses and grinders. Students following the instrument makers curriculum are given a more comprehensive course in the use of machine tools, and emphasis is placed on the skillful manipulation of hand tools and the use of accurate measuring instruments.

SECOND YEAR

MATHEMATICS. Instruction is given in spherical trigonometry dealing with right and oblique triangles composed of great circles with special emphasis on latitude, longitude and the solution of navigation problems. Analytical geometry, consisting of equations of lines and conic section curves, gives practice in graphical solution of equations and the constructions of nomographs. Elements of differential and integral calculus are presented.

ELECTRICITY. Instruction is offered in those phases of electricity which apply directly to the mechanical field. The course consists of three units of work as follows: the electric circuit; motors and their application; and transformers and generators. Optional work may be taken in electrical measurement of temperature; the measurement of power by means of a dynamometer; and interior wiring. Approximately half of the time is spent in performing laboratory experiments.

STRENGTH AND PROPERTIES OF MATERIALS. This is a study of the relationships between stress and strain; stresses and deflections in beams, shafting, columns, and machine parts; the manufacture, processing, and handling of common materials of industry. The common materials covered are: steel and its structure, non-ferrous metals, and alloys, wood, concrete, abrasives, and lubricants. Emphasis is placed on the materials related to machines rather than structures.

POWER AND HEATING EQUIPMENT (SECOND YEAR). This course is intended to familiarize the student with the equipment used in the generation of power and in heating and air conditioning. This is taught by reference reading, inspection trips, education films, and by experimental projects. Topics covered are: boilers, power plant accessories, steam and internal combustion engines, turbines, fuels, fluid flow, air conditioning, performance of machines and machine elements, and many others. The content of this course is varied from time to time to include new industrial developments. Students in this course will specialize to some extent.

DRAWING AND MECHANISM. The design of any machine consists in adapting known mechanical appliances to meet special conditions. That is, there are certain elementary units such as levers, screws, cams, cranks, gears, quick return mechanisms, motions, chains, sprockets, etc., which are the basis for all machines. These are the topics which are studied in the course.

ECONOMICS. This course gives the student a systematic introduction to economics. Emphasis is placed upon the economic problems which arise in business and industry and some of those with which the individual is most commonly confronted in the management of his private affairs. Special effort is made to apply economic theories to current developments.

INSTRUMENT MAKING. Continuing the work of machine shop for the first year, this course provides more training in the use of hand tools, the making of temporary dies, tools, and fixtures, and the operation of precision machine tools. These tools and fixtures are later used in the actual construction of such types of instruments as the co-operating companies manufacture. This course is taken by students registered in the instrument makers curriculum of the Mechanical Department.

THIRD YEAR

MACHINE DESIGN. This course consists of a number of units covering the common elements such as bearings, shafts, bolts, etc., from which machines are built. Instruction is given in the technique and general methods used in machine design, but the chief emphasis is placed on encouraging the student to plan new combinations of machine elements. The determination of sizes and shapes for machine parts, together with the selection of materials is studied. Training is given in the expression of mechanical ideas in standard technical terms. Opportunity is given the student to design a complete machine or an important component of a machine.

TECHNICAL PROJECTS. This course consists of a special project, chosen by the student at the beginning of the third year and completed under the supervision of the faculty. The exact nature of the project depends largely on the ability and resourcefulness of the student. The choice of a wide range of projects is offered, while those students who desire, may initate original projects subject to the approval of the faculty. Projects may be of the following types: (a) the design and preparation of specifications for a machine, instrument, or tool; (b) the design and fabrication of a machine, instrument, or tool; (c) the fabrication of a machine, instrument, or tool, according to given specifications and drawings; (d) an investigation of the strength or other properties of an industrial material; (e) the test for endurance or performance of some industrial machine. A comprehensive report of the work accomplished is required for the completion of the course.

MATERIALS LABORATORY. This includes measurements of tensile strength, elastic limit, yield point, area reduction, elongation, and elastic modulus on the Universal Testing Machine. Hardness tests are made with the Brinell, Rockwell, and Herbert Pendulum. Other projects include measurements of endurance limit, impact strength and torsional characteristics. These tests are made on the common metals, the emphasis being chiefly on the method rather than on the material tested. Some lubricants are tested.

PRODUCTION PLANNING. This course reviews the duties and functions of the production or planning department in the modern industrial plant. The topics covered are: time and motion study, wage and incentive systems, materials, handling of equipment, routing and scheduling of parts through the shop.

POWER AND HEATING EQUIPMENT (THIRD YEAR). This course is a continuation of the course given in the junior year, and students are given an opportunity to specialize according to their needs and interests.

MANAGEMENT. This course, following the courses in psychology and economics, is planned to give the student an all-round view of industrial organizations. The various departments or functions of management are studied separately and the students are required to read from management literature and to report their observations in the plants in which they work. Line and staff control, maintenance, inspection, design, and scheduling are examples of the material covered.

ELECTIVE. In the third year, the student is expected to choose additional hours in either machine design, power and heating equipment, or technical projects. The selection of these additional hours depend on the student's abilities, his interests, and his co-operative job.

INSTRUMENT AND TOOL DESIGN. This course consists of a number of units covering the design of instruments and mass production tools. Emphasis is placed on the design of small appliances where accuracy of motion and economy of manufacture are more important than the strength of the structure. Topics covered include technique of preparing drawings and specifications as in an industrial drafting room, tolerance, limits, fine screw threads. Vee guides and slides, lens mounting, jewel mounting, jewel and similar low friction bearings, camera shutters, iris diaphragm, jigs and fixtures, punches and dies, and welding design. The student is encouraged to develop creative ability and originality. Opportunity is given the student to design a complete instrument or important component of an instrument. Students interested in tool engineering may substitute a tool fixture or punch and die setup for the instrument design.

OPTICS AND SOUND. This course covers those topics in optics dealing with optical instruments. These include intensity of light, reflection, refraction, lenses, telescopes, microscopes, photographic optics, diffraction and interference, polarization, photoelectric effect, etc. The section on sound covers sources of sound, reeds, air columns, diaphragms. etc., propagation of sound, indulation and building ascoustics.

INSTRUMENT MAKING. This course follows machine shop as given in the second year and provides the student with an opportunity to follow through the construction of the more complex type of instrument parts and the assembly of such parts into usable equipment. The course is coordinated as closely as possible with the work of the co-operating company in which the student is employed. Hence, a variety of projects may be undertaken and these will vary from year to year as changing industrial conditions require.

STUDYING AIR CONDITIONING EQUIPMENT

THIRTY-FIVE DARKROOMS PROVIDE FACILITIES
FOR INDIVIDUAL WORK

PHOTOGRAPHY is a broad and rapidly expanding field—one which is of vital importance to science and industry. The war has increased rather than diminished its importance. Most people think of photography, perhaps, as an interesting hobby, as a means of illustrating the news, making portraits, or as an illustration for an advertisement. These are important but there are applications of photography—largely unknown—which make it indispensable to science and industry. For example, x-ray photographs are made regularly of the vital parts of airplanes, guns, and other equipment for our armed forces to detect flaws in materials, or defects in construction, which cannot be seen in any other way, yet may cause failure in service. Patterns for airplane sections and machine parts are now made by enlarging the small drawings to scale on sensitized metal, thus saving weeks or even months of skilled labor and making the finished pattern available in days, sometimes even hours. In these days when models are constantly changing and new developments are being made daily, the ability to prepare the necessary patterns for a new part without delay is of the greatest importance.

On the war front, as on the production front, photography is playing an important part. It was recently stated by a high military authority that nearly 80% of all military intelligence—that is, information concerning the disposition of the enemy, his movements and activities—is obtained by means of photography.

The young man, or woman, who is preparing for a career in photography is placing himself in a position to make a vital contribution to the war effort. Furthermore, he, or she, is preparing for a field which most certainly, when this war is over, will have new possibilities never realized before. New applications have been found and put to use under war conditions which, when peace returns, will be industrial, technological and business necessities.

The Department of Photographic Technology was founded in 1930 with the cooperation of the photographic industry and is the only such department maintained by an endowed technological institution. Its purpose has been to train men and women not in picture making alone but in photography, and photography in its broadest sense includes much more than picture making. No one whose training and experience lie wholly in the practice of photography can regard himself as fully prepared to meet the demands of a field that is steadily placing greater emphasis upon a thorough understanding of the materials and processes of photography; nor should any one regard himself as competent in one of the creative fields of photography, such as advertising photography, without art training. Prior to the war, graduates and former students were widely dispersed in the photographic industry and in various types of photography. The department is represented in practically all branches of the services—Air Force, Signal Corps, Engineers, Navy, Marine Corps and Coast Guard. With but few exceptions—less than 10%—all men from the Department now in the service are in photography; approximately 25% of these are commissioned officers.

The first year of the two-year full time course is devoted to the fundamentals of photography and as it is complete within itself may be taken with advantage by those who, under present conditions, have only one-year to devote to their training. In the second year the student interested in Professional Photography will normally include in his course of study: design, composition, sketch and studio management, in addition to professional photography. The course of study for the student whose primary interest is in Photographic Technology includes: photography, sensitometry of photographic materials, photographic and organic chemistry, technical analysis of photographic materials, mathematics and chemical and photographic literature. In each course there are certain electives. For the course program see page 56.

EQUIPMENT AND FACILITIES

The laboratories and studios occupy two floors of one building and another building in its entirety, with a total floor space of approximately 9,000 feet; containing 19 studios and 35 individual darkrooms; a demonstration darkroom, a retouching and airbrush room, print finishing room, classrooms and offices. The studios are completely equipped for individual work with cameras, lighting equipment, lenses, and other facilities for commercial, illustrative or

portrait photography in black and white or color. Sixty-six cameras of all kinds are available including three one-shot color cameras.

In addition the department utilizes the laboratories of the Department of Industrial Chemistry and some of the facilities of the Department of Applied Arts for its work in these areas.

Students are not required to furnish any photographic equipment but must supply their own film, papers, mounting stock, and other consumable supplies (except chemicals).

ENTRANCE REQUIREMENTS

For general entrance requirements, see pages 10-11.

It is desirable that applicants present credits in intermediate algebra, geometry, physics and chemistry.

PROGRAM OUTLINE

FIRST YEAR

Photography I
Chemistry I
Photographic Composition
Physics
Mathematics I
English
Retouching I
Survey of Photography
Photographic Sensitometry

SECOND YEAR

Photography II
Design (E)
Composition (E)
Sketch (E)
Mechanical Drawing (E)
Economics
Psychology
Studio Management
Theory of Color Photography
Retouching II
Airbrush
Color Composition and Harmony
*Photographic Chemistry
*Technical Analysis
*Organic Chemistry
*Photographic Sensitometry II
*Mathematics II
*Chemical and Photographic Literature

CLASS IN COMPOSITION STUDYING STUDENT WORK ON AN ASSIGNMENT

* *Indicates subjects recommended for industrial and technological program.*
(E) *Electives. In certain cases others may be included to more adequately meet a student's needs.*

The Institute reserves the right to modify its courses at any time.

DESCRIPTION OF COURSES

FIRST YEAR

PHOTOGRAPHY I. This course is designed to develop technical proficiency in photography and to introduce some of the fields in photography, such as portrait, commercial, illustrative and color work. It is the general procedure to coordinate practice in the field, studio and laboratory with discussions of the underlying theory. An effort is made also to develop a sense of pictorial values and an appreciation of photographic quality.

The course is divided into units, as follows:

(1) Introductory Photographic Practice includes the elements of composition, negative exposure and development, printing and mounting.

(2) A study of the professional camera, its adjustments and their use; elementary optics, including such topics as depth of field, image and object relations, relative aperture, etc., with a repetition of the practice in Unit I.

(3) A study of the characteristics of negative materials and the processing of negative materials in relation to the control of contrast. The projects included involve also a further study of illumination and camera manipulation.

(4) A study of light and shade. The projects in this unit involve the lighting of simple objects and the making of photographs correctly representing the lighting effect. These projects have a two-fold purpose: to train the student in the visualization of light and shade, and to acquire experience in negative and print making.

(5) Introduction to Portraiture. This unit consists of a series of projects in the lighting of the face, posing the figure, and in handling professional portrait cameras and lighting equipment.

(6) Color sensitiveness of negative materials and the use of filters. This unit is intended to develop an understanding of the different color sensitive materials and the control of the reproduction of color through the use of filters.

(7) A study of photographic lenses. This series of projects involves a study of the effect of different lens aberrations on the image and the performance of different types of lenses.

(8) Introduction to Commercial Photography. This unit contains projects in photographing machinery, interiors, architecture, and other subjects common to commercial photography.

(9) Introduction to Illustrative Photography. The work in this unit involves simple problems in making story telling pictures as applied to advertising and newspaper photography.

(10) Introduction to Color Photography. This unit is concerned with the general principles of color photography and involves practice with the simpler processes.

CHEMISTRY I. A course in chemistry dealing with the principles of chemistry as applied to photography. Topics emphasized include: basic principles, classes of compounds, types of reactions, chemical solutions, preparation of photographic solutions, halogens, silver halides, sulphur compounds, organic compounds, developing agents, cellulose products, film base, paper, metals, alloys, metallic salts, colored compounds, colloids, light sensitive salts, photographic emulsions, basic photographic processes.

PHOTOGRAPHIC COMPOSITION. The objectives of this course are to develop an understanding of picture structure through the study of composition, to increase selective judgment, to foster taste and discrimination, to appreciate form as revealed by light and shade, to stimulate creative thinking, and to gain a sufficient knowledge and skill in freehand drawing to prepare sketches and layouts for photographic work.

PHYSICS. This course is chiefly concerned with the photographic applications of light and optics. The following topics are considered in some detail: illumination, photometry, elementary photographic optics, exposure, vision, radiation, polarization and color.

MATHEMATICS I. This course is designed to provide the basic mathematics required in the other courses and includes: algebraic manipulations, factors, simple and quadratic equations, simultaneous equations, exponential laws, logarithms, simple trigonometry, functions and graphs.

RETOUCHING AND PRINT FINISHING. This course includes the following topics: (1) blocking out negatives, (2) titling negatives, (3) commercial print retouching, (4) coloring prints of commercial subjects, and (5) local modification and (6) portrait negative retouching.

STUDY TECHNIQUES AND CORRECTIVE ENGLISH. The course in study techniques is designed to help freshmen students develop habits of reading and study which will enable them to work efficiently and successfully.

ONE OF THE NINETEEN STUDIOS

A SURVEY OF PHOTOGRAPHY. This course is a survey of the various fields of photography and the applications of photography to science and industry.

PHOTOGRAPHIC SENSITOMETRY I. This course is concerned with the methods employed in measuring and expressing the characteristics of sensitive materials and the characteristics of typical negative and positive materials. Attention is also given to the structure of the developed image and some of the applications of sensitometry in processing and as applied to tone reproduction.

PHOTOGRAPHIC MAPPING. This course, offered in the evening, is recommended for those students expecting to enter military service at the end of the first year. It deals with the interpretation and use of maps and aerial photographs for both military and civilian purposes. The work of the course is divided into (1) maps and map uses—including types of maps, symbols, scale, projections, coordinates, azimuths, bearing, grid, contours, slopes, profiles and visibility; (2) aerial photography—aerial cameras and equipment, types of aerial photographs; (3) the use of aerial photographs for mapping—flight strips, overlap, tilt, construction of index maps and aerial mosaics.

SECOND YEAR

PHOTOGRAPHY II. The second year course in photography consists of projects embracing such fields as advertising, commercial, industrial, technical and portrait photography. In general, the first semester will be spent in black and white photography, the second in color photography. Students may, with certain limitations, elect programs to fit their major interests and vocational objectives. Work of professional character is expected and considerable freedom is allowed the student in developing his own ideas, particularly on projects in creative photography. Frequently, the work in photography is preceded by drawings in which the student develops his ideas in detail before undertaking the actual photography. In some cases, the student may be required to make a complete advertising layout as well as the photograph. Records are kept of the cost of production and studio operation to develop a more intelligent appreciation of these factors in an actual business. Actual studio conditions are duplicated as far as possible.

DESIGN. This course deals with the creation and delineation of decorative shapes and arrangements by adaptation and origination. It includes preliminary training in the use of color, and the application of the principles of design. The student is guided in the development of esthetic sense and judgment. Pen and ink and tempera are the media used.

COMPOSITION. This course deals with picture structure. It comprises problems in space relation in simple outline, and includes the study of the essential principles of space filling. Emphasis is placed on the understanding of notan, or dark and light. Perspective and the picture plane are studied. Drawings of original conceptions from definite assignments are carried out in black and white and color. Various media are used.

SKETCH. This course deals with the problems of making rapid sketches from the model, supplemented by the study of models in motion using motion pictures, thereby stimulating the powers of observation and developing facility in drawing.

MECHANICAL DRAWING. This course offers practice in the skills ordinarily required of the draftsman, use of instruments, lettering and inking. A minimum number of drawings are required of each student. These involve geometric construction, perspective, third angle projection, equipment layout, detail and assembly drawings.

ECONOMICS. This course is designed to help the student direct his life intelligently by developing an understanding of his place in the social order and to live in the light of this understanding. After helping the student form the general outlines of his social philosophy, the course leads him to consider more specific problems of government, economic life, social life and international relations.

PSYCHOLOGY. This course in psychology deals primarily with problems and cases in dealing with people and is designed (1) to develop an understanding of the psychological principles involved in business relations and (2) to assist the student in mastering the psychological principles involved in human conduct.

STUDIO MANAGEMENT. A study is made of the principles of accounting and general bookkeeping procedure as necessary in a photographic studio with later emphasis on cost finding. Studio business methods, sales promotion and advertising are also discussed.

THEORY OF COLOR PHOTOGRAPHY. This is an advanced course in the nature of color, its measurement and specification and fundamental considerations on processes of three-color photography.

RETOUCHING II. This is an extension of the work of the first year and includes portrait negative retouching, etching, introducing backgrounds in portrait negatives, the finishing of the print, including instruction in the use of the airbrush.

COLOR COMPOSITION AND HARMONY. This course enables the student to understand the interrelation of visual color qualities. With color thought and language organized, the various sources for color harmony and contrast, spontaneous, historic, naturalistic and schematic, are studied. This is closely associated with problems in design. All important color systems, based upon the variations of light and pigment modifications, are discussed.

PHOTOGRAPHIC CHEMISTRY. This course is concerned with (1) chemical action of light (2) chemistry of photographic materials (3) sensitizing dyes (4) developing agents and with photographic processes of (5) development (6) fixation (7) intensification and reduction (8) toning (9) pigment, iron and diazo processes and with (10) color coupling and development. The work includes laboratory experiments and assigned projects.

TECHNICAL ANALYSIS OF PHOTOGRAPHIC MATERIALS. This is an advanced course in the chemical analysis of photographic materials including gelatin, paper, film base, emulsions, developing agents, color developers and formers, etc. A study of current literature is a part of the course.

ORGANIC CHEMISTRY. This course intended primarily for students of photographic technology, covers the chemistry of the carbon compounds and their derivatives; alcohols, ethers, aldehydes, carbohydrates and the like. Many direct applications to industry are made. The laboratory work is designed to offer practical experience in the preparation of organic chemicals, such as halogenation, condensation, oxidation, reduction, hydrolysis, amidation and other reactions.

PHOTOGRAPHIC SENSITOMETRY II. This is a continuation of Photographic Sensitometry I and is intended for students whose interest is primarily technical. The course stresses laboratory practice in sensitometry.

MATHEMATICS II. This is a continuation of Mathematics I with emphasis upon topics drawn from calculus and applications to problems from chemical engineering and physical chemistry.

TECHNICAL AND PHOTOGRAPHIC LITERATURE. This course is designed to render the student familiar with photographic and chemical literature, the organization of technical papers, abstracts, use of indexes, bibliographies and reference materials.

STUDENTS OPERATING LINOTYPE AND INTERTYPE MACHINES

THE Department of Publishing and Printing was organized in 1937 with the cooperation of the New York State Publishers Association and with the active support of several publishers' associations including the national organization. Commercial printing groups and national leaders in education assist the department in many ways and assure its position as a leading school of publishing and printing. The basic program of the department is a two-year, full-time curriculum.

OPPORTUNITIES IN PUBLISHING AND PRINTING

There are exceptional present and future opportunities for successful careers in this field. In normal times an estimated 10,000 persons are needed to replace those lost through death, retirement and other causes. During the war the annual rate of loss has risen to several times this figure. It is true that the publishing and printing industries have been somewhat disrupted by war conditions. Yet there are present shortages of skilled personnel in many areas and authorities agree that this shortage will become general and critical with the return of peace. This means that the graphic arts are almost certain to offer more numerous and more attractive opportunities than ever before.

The current shortage of men has led to the widespread demand for the training of larger numbers of women. It is said that, when men are called to service, about 10% are replaced by women. This ratio is bound to increase as the war continues. When peace comes it is likely that the percentage of women to men will continue to be higher than before the war because the printing and publishing industries will need all the trained personnel available, both men and women.

Similarly there are unusual opportunities for those who, because of slight physical handicaps, are not eligible for armed service, but who could be trained to perform many of the activities required in publishing and printing.

EQUIPMENT AND FACILITIES

The laboratories of the department are located in the Eastman Building and occupy a space of approximately 8,000 square feet. Extensive facilities for hand composition are provided by ten double, steel cabinets of the most modern design with adequate stores of type and material, proof presses, saws, mitering machines, Ludlow and All-Purpose Linotype. The machine composition equipment consists of fourteen Linotype and Intertype machines including the latest models. The metal room contains an electric pot, pump and pigging molds. Stereotyping equipment includes a mat roller, flat caster with automatic heat control, scorcher, humidifier, saw and router. Adequate facilities for material casting are provided by an Elrod, Monotype Type and Rule Caster, Monotype Material Maker and Giant Caster. Pressroom equipment consists of sixteen presses of various sizes and types, such as, Chandler and Price platen presses, Craftsman Automatic Unit, Kelly, Miehle, Miller, Webendorfer and Babcock cylinder presses. Bindery facilities include a Cleveland Folder, Challenge power paper cutter, Challenge paper drilling machine and Boston stitching machines. In addition there are innumerable supplementary items, such as, make-up tables, make-ready tables, Craftsman Geared Line-up and Register Table, saws, storage cabinets, ink and roller cabinets, maintenance and repair benches and small tools.

OBJECTIVES

The curricula offered is designed to fit the needs of those who are interested in careers in the publishing and printing professions. Broadly stated the major objectives are to prepare each student for a useful, professional career in some phase of publishing and printing and, in connection with this training, to help him to develop as a well-rounded individual. A detailed statement of objectives is available upon request.

The jobs for which courses offer training are classified in three levels: immediate, intermediate, and terminal jobs. The graduate is qualified to fill several or all jobs in the first classification immediately upon completion of the basic curriculum. After several years of experience in these jobs he should

be able to win promotion to a position in the intermediate level, and, after sufficient further experience, to a terminal job. All terminal jobs represent career objectives on a professional level with desirable economic status.

The department has issued a vocational guidance pamphlet, "If You Are Considering Publishing and Printing," which is available upon request.

ENTRANCE REQUIREMENTS

Each applicant is expected to give evidence of a sincere interest in the field of publishing and printing. Graduates of high school or college are considered to have had requisite preliminary education. Before admittance, applicants are required to take classification examinations. None of these tests requires preparation.

PROGRAMS OF STUDY

The two-year, full-time curriculum is based upon a weekly class, studio and laboratory schedule of 30 hours in addition to outside preparation. The program is under constant scrutiny to assure efficiency and adequacy. To better meet present conditions the first year's work is now planned as an intensive program serving a dual purpose. It is prerequisite for the more advanced work of the second year and also serves as training for certain areas of employment after one year of study. Thus those not needed or not eligible for armed service may complete the two-year program, seek temporary employment after the first year and return to school later, or continue in such employment. This plan is especially suitable also for the young man who graduates from high school at seventeen years of age and thus can complete a basic portion of his training for a career before entering armed service.

STUDENTS OPERATING MONOTYPE CASTERS

FIRST YEAR

Business English
Economics
Elementary Lettering
Elements of Management
Hand Composition I
Industrial Psychology
Layout I
Machine Composition I
Monotype Casting I
Presswork I
Printers' English
Remedial English
Stereotype Casting I
Study Techniques
Technical Studies

Special one-year students may emphasize any laboratory course in the fourth quarter up to a limit of one-half the weekly schedule.

SECOND YEAR

Bindery Operations II
Business Law
Elements of Editorial Writing
Elements of Reporting
Estimating
History of Printing
Layout II
Machine Composition II
Machine Maintenance II
Monotype Casting II
Presswork II
Printing Plant Administration
Stereotype Casting II
Theory of Typography
Typography (Lab.)
Theory of Color
Teletypesetter Operation and Maintenance—Elective in any quarter

SUPPLEMENTARY COURSES

Advanced Lettering
Applied Electricity
Drawing I
Elementary Machine Shop
Memory Drawing and Sketch
Typographic Design

The Institute reserves the right to modify the curriculum and the courses comprising it at any time.

DESCRIPTION OF COURSES

FIRST YEAR

BUSINESS ENGLISH includes business courtesy in telephone conversations and conferences and correct English usage in business forms, memoranda and letters.

ECONOMICS. This course gives the student a systematic introduction to economics. Emphasis is placed upon the economic problems which arise in business and industry and some of those of a more personal nature.

ELEMENTARY LETTERING. This course is designed to give the student an understanding of basic letter forms, correct spacing and some skill in drawing and rendering lettering.

ELEMENTS OF MANAGEMENT gives the student initial acquaintance with the more important problems confronting management in the printing and publishing industries as a basis for cooperation with management on the job.

HAND COMPOSITION I (including ELEMENTARY TYPOGRAPHY AND MAKE-UP). This is a laboratory course to familiarize the student with the mechanics of typesetting and correct typographic usage in the composition of simple commercial and advertising projects. The work includes proofing, care and use of materials and tools, and distribution.

INDUSTRIAL PSYCHOLOGY. In this course the student uses the principles of psychology that apply most directly to problems of leadership, covering such general topics as the interaction of native and environmental factors in personal development, incentives, discipline, learning and training, employment methods, influence of working conditions, industrial relations, etc.

LAYOUT I. This course begins with work in procedures employed in layout including copy-fitting, simple mark-up of copy, indication of display, text and illustrations. After this initial work students carry out simple original projects in commercial and advertising layout. Many of these layouts are used as material in Hand Composition I.

MACHINE COMPOSITION I (and MACHINE MAINTENANCE I). This course deals with the elementary phases of composition on Linotype and Intertype machines. It acquaints the student with the proper methods of approach and operation of the keyboard and gives initial instruction in routine care and maintenance of the machines.

MONOTYPE CASTING I. This course deals with the material-making machine, type and rule caster, Elrod, and giant caster. The student is given careful training in the operation and care of each of these machines.

A CORNER OF THE ADVANCED PRESS ROOM

PRESSWORK I (and BINDERY OPERATIONS I). This is an elementary course in platen and small cylinder presswork. It includes press feeding, care of presses and make-ready of all forms of simple commercial printing. The students are assigned to the bindery for certain periods and given instruction and practice in handling and cutting stock, hand folding, simple machine folding, stitching and padding.

PRINTERS' ENGLISH is a systematic study of spelling, word division, correct punctuation and proofreading.

REMEDIAL ENGLISH. The purpose of this course is to correct faulty use of English, both oral and written. Tests are given to each student to disclose his own difficulties.

STEREOTYPE CASTING I. The student is taught to make and prepare mats for flat casting and to cast type high and shell casts. Modern casting equipment is used.

STUDY TECHNIQUES. This course gives training which aims to assist students in acquiring efficient study habits. Much of the work is individual in character.

TECHNICAL STUDIES. Information not usually given in the laboratories is discussed. Topics concern facts about the allied industries that all printers should know such as electrotyping, photo-engraving, printing papers and similar subjects.

SECOND YEAR

BINDERY OPERATIONS II. This course continues work begun in the first year but includes multiple folding and the setup, operation and maintenance of the folding machine.

BUSINESS LAW. This course defines and cites cases covering such topics as the law of contracts, the law of property, agency, sales, copyright, libel, business proprietorships, and other phases of law particularly important to publishers and printers.
ELEMENTS OF EDITORIAL WRITING continues practice in English composition with emphasis upon comment and the expression of opinion. It includes study of the functions and qualities of good editorial writing.
ELEMENTS OF REPORTING. This course deals with the methods of gathering and reporting news especially local items with which a cub reporter or part-time reporter is concerned. It emphasizes accuracy, clarity, brevity and human interest in composition.
ESTIMATING. The purpose of this course is to make the student acquainted with the elements of costs in the printing industry and with typical methods of estimating.
HISTORY OF PRINTING. This course is designed to give the student a background of historical information concerning the development of writing and printing in relation to human progress to the present time.
LAYOUT II. This continues work in Layout I but on a more advanced basis including a wide variety of commercial and advertising projects. Book design and layout are included.
MACHINE COMPOSITION II. This is an advanced course dealing with the operation of Linotype and Intertype machines. Operation includes intricate composition, illustrative work, tabular work, ad and head setting, and working from all types of manuscripts.
MACHINE MAINTENANCE II offers training in the care, adjustment and proper maintenance of line-casting machines to supplement that given in connection with Machine Composition I.
MONOTYPE CASTING II emphasizes efficient production of type and material, care of molds and equipment and the characteristics and remelting of metal.
PRESSWORK II. This is an advanced course on the makeready of all types of commercial printing, including halftone and color work, and the operation and care of cylinder presses.
PRINTING PLANT ADMINISTRATION. This course supplements the first-year course in Elements of Management. It is concerned with typical problems and their solution including: profits, budgetary control; rent; plant layout; equipment; organization; operational problems; purchasing; finance and sales.
STEREOTYPE CASTING II is a continuation of Stereotype Casting I with emphasis upon more difficult problems and the making of accurate duplicate plates.
THEORY OF COLOR includes exposition of the nature and source of color, the organization and nomenclature of color and the selection of color schemes.
THEORY OF TYPOGRAPHY is a study of the principles of good typography. It includes consideration of the requirements of readability, order, balance, rhythm and other principles.
TYPOGRAPHY (LAB.). This is a course in composition and make-up including a wide variety of projects such as, advertisements and advertising literature, business forms, tabular matter, book work and newspaper work with emphasis upon meeting good typographic and production standards. Work on the Ludlow and APL is included.
TELETYPESETTER MACHINE OPERATION AND MAINTENANCE. This course gives instruction in the use and maintenance of the perforator and operating unit.

SUPPLEMENTARY COURSES

ADVANCED LETTERING. This course is offered to those who wish to specialize in lettering. It includes study of style in lettering, modification of style, rendering of letters by various methods and lettering for reproduction.
APPLIED ELECTRICITY deals with some of the tests carried out on direct and alternating current circuits and equipment, as well as methods of connecting meters, generators, motors, transformers, relays, and control equipment.
DRAWING I serves the purpose of orientation to the subjects and techniques of graphic representation. The study is carried on from still life and plaster casts, providing practice in drawing. Freehand Perspective is included.
ELEMENTARY MACHINE SHOP. In this course instruction is given in the technique of handling lathes, milling machines, shapers, drill presses and grinders. Students who expect to specialize in the maintenance and repair of printing machinery will find this instruction valuable.
MEMORY DRAWING AND SKETCH deals with the problems of making rapid sketches from the model supplemented by the study of Models in Motion using motion pictures. This course is especially useful to students specializing in layout.
TYPOGRAPHIC DESIGN is a course in the design of special decorative features such as, borders, panels, head and tailpieces, spots, initials, and the like.

RETAIL STUDENTS LEARN BASIC MERCHANDISE INFORMATION THROUGH A STUDY OF MERCHANDISE EXHIBITS

RETAIL store executives in recent years have been increasingly aware of a real need for trained young men and women to fill positions of responsibility in this profession. Today in a wartime economy this need has become much more acute and skilled retail employees are in great demand to provide for the needs of the home front. Furthermore the post-war period, bringing with it an increase in demand for civilian goods, will provide exceptional opportunities for qualified young people who are ready to assume these positions of responsibility in the retail field. Special preparation, experience, and ability are needed to carry on this work successfully. Graduates of this course are now holding responsible positions in the buying, advertising, personnel, service, and store management divisions of all types of retail establishments.

The Institute first offered retail courses in 1923, for students beyond the high school level in maturity, ability, and training. In co-operation with co-operative employers and other store executives, careful attention has been given to the preparation and maintenance of a course of study which is practical in its nature and planned to meet the needs of this field. Faculty members

keep in close touch with new developments and store requirements through summer and Christmas-season employment in positions of responsibility. Well equipped laboratories for Clothing and Display classes are maintained, and a complete library of retail books and periodicals is available to all students.

Detailed information concerning retail work is given in three booklets entitled, "If You Are Considering Retailing," "If You Are Considering Costume Design," and "If You Are Considering Interior Decorating." Advantages and limitations of store employment, information about specific jobs, wage levels, current conditions of supply and demand, and general qualifications for success are some of the problems discussed in these pamphlets. Copies of this material will be sent upon request.

RETAILING CURRICULA

Students may elect one of three curricula, depending upon their interests—Retail Distribution, Costume Art and Retailing, and Interior Decoration and Retailing. Each program is based upon a survey of the activities of the key positions in retailing, thus giving practical emphasis to the subjects included in the program. In each case the training prepares first for selling, and then for buying or department management.

Retail Distribution offers a more general approach to retailing than does Costume Art and Retailing or Interior Decoration and Retailing. Young men or women interested in training for selling and buying should take this course, which is basic for advertising, small store management, or personnel work.

Costume Art and Retailing gives an opportunity for specialization in clothing, fabrics, and accessories. It includes special training in planning and constructing clothing, as well as the training for selling and buying.

Interior Decoration and Retailing offers training in all phases of interior decoration work in the retail field. This includes buying and selling of home and institution furnishings as well as advisory work concerning customers' decorating problems. It gives an opportunity for study of the material used in home furnishings as well as their co-ordination and promotion.

CO-OPERATIVE EMPLOYMENT

Co-operative work in retail stores provides students with practical experience in many specialized phases of retail work. In addition, store experience has the advantage of clarifying and motivating school work for the student and helping him to develop poise and self-confidence, so necessary for success.

The Institute does not guarantee employment, but every attempt is made to assist students in securing co-operative work. In most cases summer employment is available making it possible for students to receive immediate work experience. During the past year every student eligible for placement was co-operatively employed throughout the year in 19 representative stores, located in eight cities of Central and Western New York. Remuneration for co-operative work goes directly to the student.

ENTRANCE REQUIREMENTS

See pages 10 and 11 for a general statement of entrance requirements. Success in retailing depends largely upon a definite group of personal characteristics. Neatness and care in personal appearance are important, while poise ease in talking with people and facility in making friends are particularly desirable assets for retailers. Excellent health and endurance are definitely essential.

PROGRAM OUTLINE

FIRST YEAR

	Hours per week
Courses in All Curricula:	
Color and Design	5
Principles of Retailing	3
Psychology	3
Retail Mathematics	1
Retailing I	6
Study Techniques	2
Textiles I	3
Orientation	1
Physical Education	2
Additional Course for Costume Art and Retailing	
Clothing Construction I	5

SECOND YEAR

	Hours per week
Courses in All Curricula:	
Costume Coordination	5
Current Events	2
Economics	3
Fashion Trends I	4
Financial Operations	3
Merchandising	4
Retailing II	1
Physical Education	2
Additional Course for Retail Distribution	
Interior Decoration I	5
Additional Course for Costume Art and Retailing	
Clothing Construction II	6
Additional Courses for Interior Decoration and Retailing	
Interior Decoration I	5
Drapery Construction	3

THIRD YEAR

	Hours per week
Courses in All Curricula:	
Display	2
Personnel Relations	3
Philosophy	3
Planning and Control	4
Retailing III	3
Retail Sales Promotion	3
Textiles II	3
Physical Education	2
Additional Courses for Retail Distribution	
Appreciation of the Arts	3
Fashion Trends II	2
Unit Control	2
Alternate Courses including Courses in Art, Clothing, or Drapery Construction	2
Additional Courses for Costume Art and Retailing	
Clothing Construction III	5
Fashion Trends II	2
Alternate Courses including Courses in Art, Appreciation of the Arts, or Interior Decoration I	3
Additional Courses for Interior Decoration and Retailing	
Interior Decoration II	6
Interior Decoration (Art School)	4

The courses and the amount of time scheduled are subject to modification to meet the requirements of the student's job objective. The Institute reserves the right to modify any of its courses at any time.

A ROOM IDEA OF AN INTERIOR DECORATION AND RETAILING STUDENT BECOMES A REALITY — IN MINIATURE

DESCRIPTION OF COURSES

FIRST YEAR

CLOTHING CONSTRUCTION I gives practice in present-day methods of constructing, altering and renovating women's clothing. Commercial patterns are used until students have demonstrated proficiency, after which they construct their own patterns or drape their models. Practice is given on creating for the individual, and on cutting, fitting, construction and workroom techniques. Problems are adapted to individual needs and abilities.

COLOR AND DESIGN is a study of the principles of design and color theory, and emphasizes the application of these principles and theories in retailing. In practicing applications of color and design, the student may choose advertising, display, apparel or home furnishings according to his major interests.

PHYSICAL EDUCATION for all women offers a program for physical activities, including recreational gym, corrective exercises, swimming, bowling, riding, tennis, and golf.

MATHEMATICS is a course designed to help freshmen students overcome their difficulties in this subject as shown by the results of the mathematics test given at entrance.

ORIENTATION is aimed toward helping the student adjust successfully to school life, in social relationships and in cooperative work.

PRINCIPLES OF RETAILING is an introductory course which enables students to acquire use and practice in an adequate retail vocabulary; to familiarize students with the development of retailing, its present status and probable future; and to make clear the chief problems encountered in operating a modern retail store.

PSYCHOLOGY considers the basic principles of human relationships. It is concerned with the development of the student not only as a prospective executive but also as an individual

who is to participate in family, community, and governmental affairs. While the duties of salespeople, buyers and store managers have been analyzed, and the principles of psychology underlying them covered, the content of the course also includes principles applying to the broader areas of life.

RETAILING I considers problems of selling merchandise effectively. A study is made of non-textile merchandise, its value and fashion trends. Students may select those types of merchandise which are of special interest to them and most needed for future work.

STUDY TECHNIQUES is designed to help students develop habits and skills necessary for efficient and effective work. Each student carries out an individualized program including projects in reading, vocabulary, library skills, writing, English, and spelling.

TEXTILES deals with basic merchandise information regarding woven and knitted fabrics. It includes a study of variations in fabrics, reasons for these variations, and their effect upon values sought by customers. Each student makes particular application of this information to the textile merchandise used in the field of his own interest.

SECOND YEAR

CLOTHING CONSTRUCTION II deals with more difficult problems in designing, constructing, fitting and finishing. Students are expected to construct their own patterns and drape their own models. Emphasis is placed on designing for the individual, planning garments suitable to different textures, and fitting garments for other people.

COSTUME COORDINATION is a study of consistency in clothing. Emphasis is placed upon budgeting and upon individual analysis and prescription in respect to line, color and personality with personal or professional application. Projects in origination of clothing designs are planned for students who desire some practice in this field.

CURRENT EVENTS aims to help the student direct his life intelligently by leading him to know what is happening in his world, why it happens, and what it signifies.

DISPLAY aims to help the student apply basic principles of Color and Design, to display plans and set-ups for counter and wall cases, department groupings and windows. Practice is given in making plans to scale, in improvising display equipment, and in actual set-up of merchandise.

DRAPERY CONSTRUCTION gives training in fundamental construction procedures, and in estimating materials. To give actual practice in these procedures, model curtains and draperies are constructed.

ECONOMICS undertakes to give the student a systematic introduction to this subject. Emphasis is placed upon the economic problems which arise in retailing and business in general, with special attention to those which the individual most commonly faces in the management of his private affairs. Special effort is made to apply the principles of the course to current developments.

FASHION TRENDS I leads the student to a better understanding of the significant part played by fashion in all types of merchandise. Each student makes a historical study of some phase of fashion chosen in the light of his interests and his job objectives. Techniques for measuring and predicting current fashion trends are studied and practiced. Consideration is given to the factors which influence fashion movement.

FINANCIAL OPERATIONS is a study of business organization, credit, and legal principles necessary in store operation; and of insurance, taxation, and banking problems encountered by both stores and individuals.

INTERIOR DECORATION I is a survey of consistency in interior furnishings. After a brief study of historic architectural design and domestic architecture, students make a study of period styles in furniture and corresponding interior details and accessories. Application is made in room planning projects on the basis of personal or professional objectives.

MERCHANDISING is a study of buying methods including merchandise planning, techniques of purchasing, market procedures, and practices in receiving and marking. Considerable time is devoted to planning sales and stock and order figures for a specific department, with opportunity for practice work in handling such figures. Each student makes application of principles studied to the department of his special interest.

RETAILING II is a course in which the student studies methods of making written reports, and prepares a manual on a merchandise topic selected by himself in the light of his own job interest. This manual is designed to train salespeople for efficiency in selling and other departmental activities.

RETAIL SALES PROMOTION deals with problems of the department manager in promoting his department. The course includes practice in basic techniques in copy writing, layout and display; a study of the psychology of advertising and promotion; and an analysis of publicity figures for a selected department.

THIRD YEAR

APPRECIATION OF THE ARTS helps the student direct his life intelligently by leading him to see the values for him which lie in music, dancing, painting, poetry, drama, and motion pictures. No attempt is made to teach history or analysis of arts for their own sake, but considerable illustrative material is drawn from arts in which the class is interested.

CLOTHING CONSTRUCTION III develops further skill and proficiency in draping, fitting, simple tailoring, handling varied textures and creating individual designs.

FASHION TRENDS II considers sources of fashion, and fashion information, fashion resorts and designers, and problems encountered in merchandising high-fashion items. The student develops further understanding of the significant part played by fashion in selling, buying, promoting and designing merchandise.

A SMALL DISPLAY PLANNED AND EXECUTED BY A RETAIL STUDENT TO STRESS FASHION

INTERIOR DECORATION II gives extensive practice in originating furnishing schemes on the basis of the income level of the average customer and the current trends of the average store. The study of materials of decoration is continued, with attention to promotional aspects of this merchandise.

PERSONNEL RELATIONS gives the student an opportunity to study current problems and practice in personnel work in order to develop a philosophy to guide his activities as a rank-and-file employee or as a store executive.

PHILOSOPHY is a course for seniors in which the student is given practice in straight thinking and effective activity leading to a more satisfying professional and personal-social life. Two themes are emphasized: (1) helping the student to gain a broader knowledge of the structure and dynamics of society in general; and (2) aiding him in the formulation and understanding of the values toward which he may strive to achieve the most satisfying existence.

PLANNING AND CONTROL deals chiefly with the problems of planning and controlling merchandising and operating activities. This training is necessary to operate a department.

RETAILING III includes work for senior students in three areas as follows: (1) Each student makes a detailed study of that field of retailing in which he wishes to work after graduation. As a result of this study, he prepares a detailed written report on a significant management problem in this field, which is submitted for approval to a faculty committee selected by the student. (2) This section of work includes a study of the consumer education movement of today. Consumer activities in relation to retailers are analyzed and evaluated. (3) The third part of the course consists of the study of several essential business practices such as writing letters of application for positions.

TEXTILES II is a continuation of fabric study and a survey of the latest developments in the textile field.

UNIT CONTROL is designed to give training in planning and controlling merchandise assortments in terms of individual items. The three types of control systems are studied to give background information, after which their basic principles are applied to various kinds of merchandise in order that the student may understand the installation and operation of this phase of merchandise control.

ROCHESTER
ATHENAEUM
and
MECHANICS
INSTITUTE

. . . DEVOTED TO AN EDUCATION FOR THE MAKING OF A LIVING AND FOR THE LIVING OF LIFE NOT AS TWO PROCESSES BUT AS ONE.

Application for Admission
ROCHESTER ATHENAEUM AND MECHANICS INSTITUTE
ROCHESTER, NEW YORK

Date of Application

Name ..... (First Name / Middle Name / Last Name)

Mailing Address ..... (Street and Number / City / County / State)

Course desired ..... (State Name of Course) Telephone .....

Date of Birth ..... Church Preference .....

Nationality ..... Race ..... Weight ..... Height .....

Name and address of parent, guardian or nearest of kin .....

References: (Give names of three persons, stating in what connection they have known you, whether as teacher, friend, employer, etc. Include principal of last school attended and, if employed, the name of your employer).

Name	Address	Connection in which you have known person

Statement of experience (List here all work done outside of school).

Name and Address of Employers	Nature of Your Work	How Long Employed

Complete Statement of Previous Secondary and College Education:

Schools Attended	Date From	Date To
1.	"	"
2.	"	"
3.	"	"
4.		

If you are a high school graduate, state the year of graduation .....

A registration fee of five dollars ($5.00) must accompany this application. This will apply on tuition but will not be refunded in any case.

H.C.Co 8-40 25M